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H. BENCKE, LI

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D

A TREATISE

ON

SYPHILIS

IN

NEW-BORN CHILDREN AND INFANTS AT THE BREAST

BY

P. DIDAY

EX-SURGEON TO THE HOSPITAL DE L'ANTIQUAILLE, LYONS

TRANSLATED BY

G. WHITLEY, M.D.

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15.10.40

WITH NOTES AND AN APPENDIX BY

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NEW YORK
WILLIAM WOOD & COMPANY
1883

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1883

TROW'S
PRINTING AND BOOKBINDING COMPANY,
NEW YORK.

PREFACE TO THE AMERICAN EDITION.

It had been the intention of the American Editor to have published a work on Infantile Syphilis, but professional and other engagements made it impossible for him to devote the necessary time to the accomplishment of this plan. He, therefore, with the consent of the publishers, Messrs. William Wood & Co., of this city, decided to annotate the work published by M. Diday, of Lyons, adding such material as was necessary to bring the work up to our present knowledge of the subject. He hopes that he has accomplished this work to the satisfaction of his readers, and he believes that this method of annotation will serve to bring out many points in the Pathology and Treatment of Infantile Syphilis better than it could have been done in an independent work.

16 West Thirty-second Street, New York City.

AUTHOR'S PREFACE

TO THE

ENGLISH TRANSLATION.

Having learnt accidentally that this work is being translated in England, I have requested the honor of adding a few lines thereto for the purpose of expressing the feelings with which this information has inspired me. If anything could add to the satisfaction which an author derives from so explicit and spontaneous a token of approval, it might assuredly be found in the circumstance that such approval is accorded by a Society which, in giving it, cannot be suspected either of acting from mere complaisance, or of yielding to solicitation, but which answers only to the calls of a pure love of science. I may perhaps be permitted to observe that, in conferring upon my work this high encomium, the New Sydenham Society will, at the same time, unintentionally have caused a part thereof to redound to their own countrymen. Of the clinical records and theoretic generalization, the *ensemble* of which may give some value to my work, none have been furnished me in such great number or of a character so valuable as those by the specialist writers of Great Britain.

Since the publication of my "Treatise on the Syphilis of Newborn Children and of Infants at the Breast," I have not had either to record or to discuss any considerable opposition to the principal points set forth in it. If several *explanations* which I had myself given with

every reservation, and rather as probable than demonstrable, have been criticised, the *practical facts* which I have brought forward have not been contested. The transmission of the poison by the fœtus to the mother, denied at that time, has now become admitted, if I may believe the development which this principle has received from various authors; in the first rank among whom justice requires that I should mention Mr. Jonathan Hutchinson and Mr. Victor de Méric.

The doctrine of transmissibility between nurses and sucklings, plainly enunciated by me, has not been seriously disputed, neither can it, as I conscientiously believe, be disputed by candid practitioners. The contagiousness of *congenital* syphilis is, then, placed beyond doubt; and at the same time that it is an accepted principle, so it is one of the most important, as may be seen from an examination of the consequences I have attributed to it (in my recent work [1]), in the explanation of cases of the transmission of constitutional symptoms in *adults*.

All these truths could not remain, and have not remained without influence on practice. Although my position as an author obliges me to allow myself to be judged without developing my means of defence, I cannot, nevertheless, resist the temptation of recommending more particularly to my readers the conclusions which I draw (Part V., Chapter I., Section I.), concerning the data by which an individual who has had syphilis will be able to recognize whether he is in a state to beget healthy children. No doubt it is a language less reassuring than that held by the earlier writers on syphilis, persuaded as they were of the *indispensability* and the *infallibility* of mercury; but my experience and my conscience forbid me to speak otherwise.

Upon these various questions, however, light continues to fall from all countries and from all minds. However carefully matured a book

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[1] Exposition critique et pratique des nouvelles doctrines sur la Syphilis. Paris, 1851, 1 vol. en 12, chez J. B. Baillière et fils.

may be, it cannot reproduce the scientific movement of its epoch. If it pretend to have fixed this movement, it is in danger of impeding it. Imbued with this truth, I have sought to utilize the relations which my position as a journalist procures me; and, in concert with my honorable friend and colleague, Dr. Rollet, at present head surgeon of the Hospital de l'Antiquaille, I shall publish annually a volume,[1] in which will be collated and discussed all the details of progress effected during the year in this branch of medical science, so interesting to those who cultivate it with the love of truth and the feeling of duty.

P. DIDAY.

Lyons, December 20, 1858.

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[1] Annuaire de la Syphilis et des Maladies de la Peau. The first number of this Yearly Miscellany will appear in February, 1859, J. B. Baillière and Sons, Paris.

CONTENTS.

PAGE

INTRODUCTION, ... 1

PART I.—ETIOLOGY.

CHAPTER I.

HISTORICAL NOTICE, ... 5

CHAPTER II.

DEFINITION—DIVISION: CONGENITAL SYPHILIS—ACQUIRED SYPHILIS, . . 11

SECTION A.—CONGENITAL SYPHILIS, ... 11

I.—Influence of the father, ... 11

II.—Influence of the mother, ... 23

A. Influence of the mother infected before the moment of conception, ... 23

B. Influence of the mother infected after conception, ... 23

III.—Combined influence of both parents, ... 33

SECTION B.—ACQUIRED SYPHILIS, ... 37

I.—Infection during labor, ... 37

II.—Infection by lactation, ... 40

A. By a morbid lesion in the nurse, ... 40

B. By the milk, ... 43

III.—Infection from accidental causes, ... 49

A. By a primary sore in the nurse, ... 49

B. By a stranger the subject of a primary chancre, ... 50

C. By a person affected directly or indirectly with congenital syphilis, ... 52

D. By inoculation, ... 53

PART II.—DESCRIPTION.

CHAPTER I.

PAGE

DETAILED AND DIAGNOSTIC INDICATION OF EACH LESION, ... 56
I.—Primary chancre, ... 56
II.—Buboes, ... 56
III.—Exanthemata, ... 57
IV.—Mucous patches, ... 59
A. On the skin, ... 59
B. On the mucous membranes, ... 61
V.—Papulæ and squamæ, ... 63
VI.—Pustules, ... 63
VII.—Bullæ, ... 66
VIII.—Syphilitic coryza, ... 73
IX.—Onyxis, ... 76
X.—Lesions of the osseous system, ... 77
XI.—Characteristic general appearance, ... 81
XII.—Lesions of the viscera, ... 82
A. Lesions of the lungs, ... 83
B. Suppuration of the thymus gland, ... 85
C. Lesion of the liver, ... 86
D. Peritonitis, ... 89
E. Intestines, ... 90
F. Heart, ... 90
G. Kidneys, ... 91
H. Spleen, ... 92
I. Eye, ... 92
K. Ear, ... 96
L. Nervous system, ... 97
M. Teeth, ... 98
N. Alopecia, ... 99

CHAPTER II.

PROGRESS OF THE DISEASE, ... 100
I.—Period of its appearance, ... 100
II.—Relation of the progress of the disease to its particular mode of origin, . 104
III.—Relation of the progress of the disease to the period of the diathesis in the parents at the time of its transmission, ... 110
IV.—On retarded or masked congenital syphilis, ... 114
A. May hereditary syphilis fail to produce its first symptoms until several years after birth? 115
B. Can hereditary syphilis manifest its action by morbid effects other than the characteristic symptoms of venereal disease? 119

PART III.—PROGNOSIS.

CHAPTER I.

PAGE

ETIOLOGICAL PROGNOSIS, ... 126

CHAPTER II.

SEMEIOLOGICAL PROGNOSIS, ... 132
I.—Abortion, ... 132
II.—Death after birth, ... 136
III.—Gradual diminution of the fœticidal action of the poison, . . . 137
IV.—Transmission of syphilis from the fœtus to its mother, . . . 142
V.—Transmission of syphilis from the suckling to its nurse, . . . 148
VI.—Transmission of syphilis from the new-born child to indifferent persons, 173

PART IV.—MEDICO-LEGAL BEARINGS.

ELEMENTS OF THE JUDGMENT OF AN EXPERT, ... 176
I.—Morality, ... 177
II.—State of health, previous and present, ... 177
A. On the part of the parents, ... 177
B. On the part of the nurse, ... 179
III.—State of health of the persons exposed to contracting syphilis from the same source, ... 179
IV.—Nature of the symptoms, ... 180
V.—Seat of the symptoms, ... 181
VI.—Comparative date of the symptoms in the nurse and in the infant at the breast, ... 181
VII.—Absence of primary symptoms, ... 183
VIII.—Presence of primary symptoms, ... 184
IX.—Absence of interested motives, ... 186
Conclusion, ... 187

PART V.—TREATMENT.

CHAPTER I.

PREVENTIVE TREATMENT, ... 191
SECTION I.—TO PREVENT A CHILD CONCEIVED, BORN, OR REARED UNDER CONDITIONS WHICH EXPOSE IT TO SYPHILIS FROM BEING ATTACKED THEREBY, ... 191

PAGE

I.—Conditions dependent upon conception, ... 191
First Case: before marriage, ... 191
Second Case: after marriage, ... 195
Third Case: after conception, ... 197
II.—Conditions connected with parturition, ... 204
III.—Conditions dependent upon the persons among whom the child is brought up, ... 206

SECTION II.—TO PREVENT A CHILD ATTACKED BY SYPHILIS FROM TRANSMITTING THE DISEASE TO THE PERSONS WITH WHOM IT IS IN RELATION, ... 209

CHAPTER II.

CURATIVE TREATMENT, ... 219
I.—At what period must the general treatment of infants be commenced? 220
II.—Must infants be treated directly, or through the medium of the milk? 225
III.—By what channel is the absorption of specific remedies by infants affected with syphilis to be aimed at? 233
IV.—To which of the remedies recommended as anti-syphilitic must preference be given in the treatment of infants affected with syphilis? . 237
V.—In what pharmaceutical form must the anti-syphilitic remedy be administered? 242
A. Internal treatment, ... 242
B. External treatment, ... 243
VI.—In what dose and according to what progression is the remedy to be given? 247
VII.—What is the duration of a course of anti-syphilitic treatment in infants? 253
VIII.—With what sanitary precautions must the child be surrounded to promote the curative effect of the treatment? 255
IX.—When and how must the influence of the general treatment be promoted by that of a local treatment directed to a given symptom? . 257

FORMULÆ, ... 263

APPENDIX, ... 264

INDEX, ... 307

ON SYPHILIS

IN

NEW-BORN CHILDREN AND IN CHILDREN AT THE BREAST.

INTRODUCTION.

The study of syphilis attracts universally, and as it were irresistibly, the attention of acute inquirers. Observe its progress; follow the discussions to which it gives rise; count the number, weigh the merit, of those who cultivate and honor it; note how it always remains pure and scientific, despite the contact of charlatanism and speculation; and say whether this branch of medical science does not enjoy a kind of privilege —shall I say notwithstanding its origin?—which distinguishes it and raises it above all other specialities.

This tendency is easy of explanation. In addition to the practical and social importance of the problems which it supplies, the history of syphilis further excites the mind by the alluring charm of positive solutions. This poison, intangible, but real; this disturbance, hidden in its action, but patent in its effects; this state of incubation and latent period, speedily followed by disorders which manifest themselves outwardly; everything imparts, at the same time, to venereal affections, the mysterious character of medicine and the stamp of surgery. On every happy innovation, every discovery of details, the problem is believed to be solved. And this end, always in view, yet always distant, to which observation brings us nearer, while reflection separates us further from it, remains to excite efforts the more praiseworthy, after all, since their partial failures have never been altogether sterile, and since, like those of the alchemists in their aspirations after the absolute, they have often realized, by the way, more than one important practical improvement.

The syphilis of new-born children would alone abundantly justify these remarks. The obscurity of its origin, the unexplained mechanism

of its first effects, and the circumstance that its usual termination at this age is death, have naturally rendered special writers the more assiduous in their researches. Its history also, though somewhat modern as compared with that of general syphilis, is already rich in valuable monographs. A condition inherent in its very nature has hitherto, unfortunately, impeded the study of this disease, and appears to weigh fatally upon its nosological future. Profiting by the necessary obscurities of the subject, dogmatical writers have too often abused the opportunities of bringing forward hypotheses which they boldly urged as proved, simply because it had been impossible to demonstrate their incorrectness. Some have described congenital syphilis as a condition apart; exceptional in its etiology; exceptional in its capability of destroying the fœtus without leaving any traces of its presence; exceptional in that its symptoms entirely elude the classification by periods so justly established in the adult; exceptional in the contagious property of *all* the lesions which it engenders.

Others, on the contrary, resuscitating the *theory of analogues*, admit the most perfect identity between the characters of fœtal poisoning and those of the diffusion of the poison of a chancre in an adult who has contracted it. In the propagation of the disease from parents to their children, they see only the phenomena of ordinary contagion. They follow, step by step, the transit of the infectious agent through the absorbents, in the embryo as in the adult. In the evolution of disorders which sometimes prove fatal in a few days, they still find time and space to distinguish a secondary and tertiary phase. Lastly, they deny the transmissibility of congenital syphilitic lesions.

If both parties had been content to accept experience, consulted freely and without afterthought, as an arbiter, we should rather have had reason to congratulate ourselves upon these dissensions, which, by evoking controversy, stimulate to investigation and accelerate the triumph of the good cause. But it would show great ignorance of our science and our age to imagine that truth could long remain intact in the midst of this conflict of rival opinions. The study of infantile syphilis ought to be an *end;* and it certainly appeared sufficiently important to satisfy the ambition of investigators, sufficiently arduous for all their zeal. Far from this; it has become either a *means* by which to arrive at a general theory of syphilis, or, in the eyes of some, an *obstacle*, a stumbling-block for a doctrine, proof, until then, against any serious objection.

What has been the result? Animated by discussion, neither party has remained within the bounds of moderation. The solution of this pathological problem having thus degenerated into the proportions of one of those detail theorems intercalated to contribute to a main proof, every one has used the weapon in his own way or according to his own interests. As a *means*, its signification was strained; as an *obstacle*, men sought to avoid it

or to overthrow it. Thus, instead of observing first, and then drawing their conclusions, they boldly took the latter step, and then sought to conform observation to these hastily formed opinions. Thus—common rock, upon which split all systems arrived at the acme of their fortunes—we have seen the best minds, forgetting the laws which they had themselves promulgated to the satisfaction of all, dispute the most adequate diagnostic signs; assume fraud where ignorance alone is responsible; assert the existence of immortality solely because its opposite is not easily demonstrated; set down, amongst all the instances of fœtal contagion, each of its victims as culpable; repudiate the most respectable evidence, the universal assentment, and the unanimous decision of all the authorities; refuse, in a word, to look at what is shown to them, that they may admit only what they wish to see.

The worst effect of this error—one with which each party may equally be reproached—is, that it tends to compromise indefinitely the future of science, by corrupting the sources themselves at which it might be purified. With this pertinacity in torturing facts—which strips them emulously on both sides, of what is true in them, to leave them only what appears probable to each party—the elements of an exact history of congenital syphilis are, at the present day, very difficult to collect. Very few contemporary observations have been collated without the intention of supporting or attacking some theory, and as much precaution is required in the choice of them as discernment in their interpretation. In respect to some, the name of their reporter suffices to give the measure of the confidence they deserve. In others, it will be prudent to correct, by the aid of their indifferent circumstances, the exactness of those which may have been altered or assumed to suit a purpose. In others again, we may take the fact but reject the explanation of it. And it will, in the end, be safer, in disputed questions, to rely by preference upon the experience of the older writers, who, unfettered by the systematic preoccupations of our period, relate simply what they have seen, and not what has been taught them.

Thus to defend the rights of observation against the pretentions of theory is the duty of every cultivator of medical science, and one which the practice of our art furnishes us only too many opportunities of fulfilling. But the obligation becomes more imperative and sacred when, as in the case of congenital syphilis, the usurpation of imagination over reality reveal themselves in the form of irreparable injuries to the health, the lives, and the honor of individuals, families, and nations. A man has just been cured of syphilis; how soon can he procreate safely? One, two, three successive pregnancies have terminated before the full time in the expulsion of an atrophied and, as it were, blighted fœtus. Is this a sign of venereal disease in the mother—a sufficient reason for subjecting her to specific treatment? A child is born covered with characteristic blots. Can we, without scruple, give it to a healthy woman to suckle? A nurse, pre-

viously robust and free from any venereal antecedents, presents ulcerations on the breasts having some resemblance to chancres. One school affirms that they are primary, and cannot be anything else. Must we accept its dictum, and deny that they may have resulted from suckling a syphilitic child, abstaining, consequently, from giving mercury to this woman? These are some of the hundred questions which practice daily evokes. But to these problems, which ask for and command an exact solution, experience often answers in the affirmative—a given doctrine in the negative. It is not surprising, then, that when it becomes necessary to choose between two such advisers, our choice is always made in favor of the fact against the pretended right. We may take pleasure in the spectacle of the human mind laboring to develop its synthetic creations; we may ourselves sometimes yield to temptation, and risk some steps on this path. But in the face of dangers so grave, the interest of a system pales before that of humanity: positivism is no longer the mere desire of the philosopher—it rises to the rank of a social necessity, and everything must be placed in subordination to its laws. Such, at least, is my opinion; such will be my invariable rule of conduct in the course of this work.

To embrace in a complete and methodical classification the numerous points connected with the history of syphilis in new-born children, this work has been divided into five parts:

The first is devoted to studying the mechanism of the development of the disease, its different origins, and the respective part played by each of them in its ulterior evolution—*Etiology.*

The second comprises the description of the various forms, and no less variable progress of the disease—*Semeiology.*

The third treats of the dangers peculiar to syphilis at an early age, of the transmissibility of the lesions which it occasions, and of the mortality which it causes—*Prognosis.*

The fourth is more especially devoted to the discussion of the questions to which cases of this kind frequently give rise in courts of justice—*Medico-legal bearings.*

The fifth explains the treatment in all its details: preventive treatment; curative treatment; treatment direct or indirect; treatment of the child, the parents, and the nurse; prophylaxis to be employed by persons having relations with the infected nursling, etc.—*Treatment.*

PART I.—ETIOLOGY.

CHAPTER I.

HISTORICAL NOTICE.

It is necessary, before discussing the opinions which actually obtain concerning the various modes of transmission of syphilis to infants, to inquire what foundation these opinions have in the views of our predecessors; by what means they have successively become established or discredited in the minds of medical men; and whether those which now, from their early date, appear most respectable, are the result of serious observations or the product of popular prejudices.

But this historical notice, which was only touched upon by Mahon and Bertin, presents to us, at the outset, this singular fact, viz.: that the truth, caught sight of for a moment and clearly sketched out by the writers of the first period, soon became obscured by the speculative views which sacrificed the study of the objective phenomena of the disease itself to rash inquiries into its primordial cause, so that it afterward required a complete change in the processes of scientific research to reunite the broken chain of sound traditions, and to place upon a firm basis the etiological determination of congenital syphilis.

According to Mahon, Mathiolus (1536) was the first writer who mentioned the existence of syphilis in new-born infants. However, toward the end of the fifteenth century, Gaspard Torella (1498) wrote: "In pueris lactantibus prima infectio apparet in ore aut in facie; et hoc accidit propter mammas infectas, aut faciem, aut os nutricis, seu alicujus alterius. Solent enim nutrices sæpius infantes osculari, et sæpius vidi infantem infectum hoc morbo multas nutrices infecisse." In this passage he makes no allusion to the doubtful infection by the milk. The expression "propter mammas infectas" clearly proves that he admits of no transmission except by the contact of a local sore in the nurse with some part of the body of her suckling.

Cataneus (1505) believed firmly in the infectious influence of the nurse's milk, and advised that infants should not be intrusted to such as had had the *French disease*, even if they were perfectly cured of it; for, he adds, it

is very apt to recur. The following very explicit phrase of his has often been quoted: "Vidimus plures infantulos lactantes, tali morbo infectos, plures nutrices infecisse." But in comparing it with that which we have just borrowed from Torella, it is evident that Cataneus, if he really observed such facts, confined himself, in the description of them, to copying the text of his predecessor.

George Vella (1508) still believed in contamination by the nurse exclusively. Led by induction, however, he surmised another source of poisoning, and asked himself: "Quare autem parentes non generant prolem infectam, cum materia quæ subjicitur pro generatione spermatis sit infecta?" Unfortunately his experience did not yet suffice to mature these doubts, and he was content, in regard to the point at issue, with this negative solution of them: "Nisi esset quod, si subjicitur, non subjicitur immediatè, sed mediatè, et per plures transmissiones purificatur et a malitiâ illâ expoliatur."

Conrad Reitterius (1508), in his ode address to the Virgin Mary to beseech her to arrest the ravages of this malady, confines himself to the mention of infection by nurses:

> "Non puer tutus teneris in annis,
> Quem suæ lactat genetricis uber."

Paracelsus (1529) was the first who asserted positively the reality of the most usual mode of the propagation of the malady, by specifying that, in certain cases, "fit morbus hereditarius, et transit a patre ad filium."

But almost immediately after the truth had been proclaimed error seems to have resumed its empire, for Nicholas Massa (1532), to whom it was sought to give the credit of this discovery, confines himself to quoting the case of three children, of the respective ages of three, six, and eleven years, whom he had seen affected with syphilis. And, as he adds that they could not have contracted it either by coitus or suckling, it was no doubt assumed that he concluded that they had inherited it. But besides that such a view is not to be found in any part of his work, the age of these patients alone shows that there could be no question with them of such a mode of propagation; for it is, in general, long before the third year that the symptoms of hereditary syphilis are developed, and it is almost unexampled that they have been delayed until the sixth and eleventh year. Everything seems to prove, therefore, that they had contracted the malady after birth, by contact with persons suffering from communicable forms of syphilis; unless, indeed, these had been instances of the retarded congenital syphilis to be mentioned hereafter.

Antonius Gallus (1540) writes, it is true: "Sensere quoque hanc labem virgines et infantes," but it is clear that he does not allude, in this phrase, to congenital syphilis, for infants are only introduced to complete the picture in which he shows the ravages of the disease attacking "tam viros

quam fœminas, pueros quam senes, proceres quam mancipia, magistratus quam humilem plebem!"

The more we advance, the more does the light acquired lose in brightness. Thus, J. B. Theodosius (1541) merely say that "he fears this malady may be hereditary." But, to justify these suspicions, he has no better proof to offer than the observations of three brothers whom he had seen die of the consequences of the *French disease*. It appears that, according to his mode of reasoning, they could not all three have contracted it in the ordinary way, and that it was more reasonable to look for the common germ in their parents than in an impure connection on the part of each of them.

Montanus (1550) also alludes only to transmission by the nurse's milk.

Musa Brassavole (1553), however, a very learned writer, distinctly records three modes of transmission: I. That in which the child has been infected by actual contact (subagitatus a turpissimo in moribus homine). II. That in which it has been suckled by an infected nurse. III. That in which, being itself infected, it communicates the disease to its nurse. We see that this description includes everything except the most usual mode of communication, that by generation

Another writer of this period seems to have been on the right track. Augier Ferrier (1553) thus expresses himself: "Cum in utero morbus contrahitur, tanquam hereditarium fit malum, et tanquam corruptum elementum unâ cum paterno vel materno semine infunditur; aut si mater a die conceptionis in morbum inciderit, communicatio fœtui, vitiosis infectisque humoribus." The three modes in which infection may occur during intrauterine life are here very clearly defined, and modern researches have added nothing to this distinction. Unfortunately, in establishing it, Ferrier appears to have trusted more to its probability than to its reality; for he does not allude to any observation of his own in support of it.

An almost equally positive assertion is met with in the work of one of his contemporaries. The following apparently decisive passage may be quoted from P. Hascharidus (1554): "Transmittitur per generationem, quoniam hic morbus humores vitiat et corrumpit; unde semen corruptem qui sic affecti sunt emittunt, et ex hoc proles vitiata ac corrupta creatur." But on reading the whole chapter it becomes evident that, far from relying upon facts or even a personal conviction, he has no other basis for this assertion than the belief of Hippocrates in the conformity of the semen with the peculiarities of the individual by whom it is secreted. Let us admit, however, that some of the developments of this doctrine appear to be proper to him. Thus, he says, "children are more severely infected when the infection is derived from the mother, because they then acquire the disease from a double source, generation and lactation." But among these definite assertions, justified though they have been by later experience, we do

not meet with a single observation, or even a description! Perhaps, after all, we ought not to be much surprised at the gaps which we meet with in the works of the writers of this period. Where could they have found room for facts in the midst of their interminable dissertations on the primitive seat of the *French disease*, which they assume, almost unanimously, to be the liver; on its essential cause, which they agree in attributing to an unhappy conjunction of the planets, of which one of them, Grunbeck, 1499, accuses two, Jupiter and Saturn, of having done all the mischief!

Could it have been that, at this period, the transmission of syphilis by generation rarely or never occurred? If the almost universal silence of the writers of the sixteenth century could have given rise to this idea it would have been dissipated by reading the following passage, in which Gabriel Fallopius (1555), after having asserted contagion by the milk, goes on thus: "Præterea videbitis puerulos nascentes ex fœminâ infectâ, ut ferant peccata parentum, qui videntur semi-cocti." To his mind, indeed, this proves only that the malady does not always commence in the genital organs, but in the part which has been in contact with an infected channel. Consequently, according to his views, this would only be an instance of what we now call, *infection during labor*. But the fact obtains independently of his erroneous explanation; and the characteristic expression *semi-cocti* bears ample testimony, in his day as in ours, to the influence exercised by the poison upon the child during intra-uterine life.

J. Fernel (1556) adopts as real all the possible agents of infection, the milk, the saliva, the sweat, and other secretions. The semen and ovum alone are not, perhaps, comprised in his enumeration.

Rondelet (1560) furnishes us, at last, with a fact. A fact! something precious for that period, despite the brevity of his description. "Ego vidi puerum nasci totum co-opertum (sic) pustulis morbi gallici." This is no longer a vague assertion, it is the author who has himself observed it. *Ego vidi*. . . . The interest attached to this case is doubled when we reflect that there is question not only of syphilis contracted by generation, but also of symptoms existing at birth, a circumstance of which even some modern writers on syphilis deny the possibility.

The views of our learned Ambrose Paré (1561) on this subject are not easily determined. If we refer, as Mahon has done, to his thirty-third chapter, *on syphilis occurring in young children*, we should have no reason to doubt that he had recognized hereditary transmission; for the chapter begins thus: "We often see infants who are born with this malady, and on whose bodies numerous pustules appear soon after birth." But, as previously, when treating of prognosis (Chapter V.), he declares positively that "syphilis is never observed to be transmitted from father to son," his real meaning becomes clearer. When speaking of infants as being born with the disease, he only means, as it appears to me, that they are

born with the germ of it; an explanation which the appearance of pustules *soon after birth*, and not immediately, tends further to confirm. According to his views, therefore, there is question only of infection during labor.

Botal (1563) might pass for an advocate of infection by generation, if we argue from what he omits as well as from what he asserts: "Pueri ex infectâ matre editi, inculpatum ætatum agent longævam, modo a sanâ nutrice aliti fuerint." Leaving out of the question the possibility of infection by the milk of the nurse, must we conclude, from this phrase, that if, on the contrary, they have not been fed with good milk, the infants will afterward, in his opinion, suffer from the pathological consequences of infection by the mother.

In the seventeenth century we have Guyon-Dolois, who believes in hereditary syphilis, in infection by the milk, and in the transmissibility of the disease to the nurse. At a later period, Musitanus insisted upon the last-named class of cases. Garnier occupied himself specially with the treatment of syphilitic children. De Blegny, lastly, called attention to the accidental causes of contagion in new-born children, and to the infallible danger of infection by the milk of a nurse affected with the disease. But here we approach that less remote portion of the historical notice which Mahon has treated in as complete a manner as we have ourselves endeavored to treat that of the earlier periods.

In the course of the eighteenth century there appeared, first, the special researches of Boerhaave, who describes the different sources and varying mechanism of infection. These were followed by Astruc's work, an erudite and profound dissertation, but confined to recognizing and specifying the different share of the father and the mother in the contamination of their progeny, and to exaggerating the value of indirect treatment. Rosen was the first to call attention more particularly to symptoms, and to render more familiar, by their aid, a disease which had previously been studied almost exclusively in reference to its causes. Levret was chiefly occupied in demonstrating the power of mercury when administered at the proper time. Fabre, with as little of proof as of order, multiplied his divisions and subdivisions of the etiology of the disease. And lastly, the exaggerations of Sanchez, who saw syphilis everywhere in new-born infants, even to the *greenish color of the excrements*, no less than the bold negations of Hunter, threatened to retard the study of this disease which was still so little advanced, when a special hospital was founded at Vaugirard, in 1780, for the reception of pregnant women affected with syphilis, and their infants. From that moment the possibility of observing the disease more closely on a larger scale, and of comparing the results of different modes of treatment, gave an impulse to the study of congenital syphilis, which has not since abated. The names of Faguer, Doublet, Bertin, Mahon, and Cullerier are closely connected with this revival, of which they were

the chief promoters, and which they established on the most solid foundations.

But if we pursued the inquiry further in this form, history would encroach inconveniently upon the domain of pathology. The authors whose doctrines still remain to be explained, and the facts upon which they based them, will be mentioned in the course of this work. It sufficed for our present purpose to refer to their first origin the opinions which have successively obtained as to the various modes of infection in children, and to show under what patronage, in spite of what hesitations, and on what proofs they have taken their rise, their development, and lastly their right of citizenship in science.

CHAPTER II.

DEFINITION—DIVISION.

The generality of special writers employ indifferently, in the designation of this disease, the terms hereditary syphilis, congenital syphilis, syphilis by generation, infantine syphilis, and syphilis of new-born children. These denominations, however, are not synonymous; some express a genus, others a species, others again, according to certain writers, only a simple variety. We must be careful, therefore, not to apply them indiscriminately to the various etiological modifications of an affection which presents, in this particular respect, so much diversity.

An infant may contract syphilis: firstly, during intra-uterine life, through the formative or nutritive elements derived from its parents; secondly, during or after birth, by the absorption of the virus from some source or other. Hence we have two classes of phenomena which we shall study successively, under the designations of *congenital* and *acquired* syphilis.

Section A.

CONGENITAL SYPHILIS.

To determine how much is real in the different influences to which this kind of transmission of syphilis has been attributed, we must take the problem to pieces. We shall examine them one after the other, as well in reference to their derivation from each of the two parents, as to their being exercised before or after the moment of fecundation.

I.—*Influence of the Father.*

The father alone being syphilitic, can he communicate the disease to the child? If this question has been put doubtfully; if many writers believe that the power of the father, in this respect, is much more limited than that of the mother; and if some others, as Vassal and Bouchet, still contest the reality of this power, we must attribute it to a circumstance peculiar to facts of this kind. The father, in fact, is very rarely affected with this disease without communicating it to the mother before or during pregnancy. And when the child is born with symptoms of syphilis, we do not know to which of the parents they are due. But since the mother—

the last to be infected, and, moreover, often ill-cared for on account of the obstacles which gestation opposes to treatment—is most frequently at the time of her confinement the only one affected, it is in her that the symptoms are then observed, and it is she who is accused of having transmitted them.

However, despite these inherent difficulties in establishing the paternal influence, there are few specialists who have not been able to do so. I have been astonished, therefore, to see Trousseau (*Gazette des Hôp.*, 1846, p. 571), impute to Ricord the opinion, "That it is not possible for a syphilitic father to communicate the disease to the child, unless he has previously given a chancre to the mother." The illustrious surgeon of the Hôpital Du Midi has explained himself too clearly on this point, in various writings, to allow of our interpreting the prudent reserve which he is fond of exercising on the delicate question of paternity as a denial of the infecting influence of the real agent.

Moreover, numerous and precise facts furnish a positive demonstration of this theory. Professor Cederschjold[1] has frequently seen children affected, some weeks after birth, with copper-colored spots on the forehead, ulcers about the arms, etc. He adds, "The mothers were healthy, and there was no reason to suppose that they had been infected."

Swediaur[2] quotes the case of a dragoon affected with venereal ulcer of the throat, whose child presented the same symptom. "The mother," he adds, "has never had any venereal affection, and is still in perfect health."

Bertin, in his thirteenth observation,[3] relates the case of a woman, free from syphilis, and having had four very healthy children by her first husband, who married a second, who was affected with the disease, and gave birth, though herself perfectly healthy, both at the time and afterward, to a little girl who had venereal ulcers of the mouth at the age of six weeks.

Depaul[4] recognized symptoms of syphilis in a new-born infant whose father had had an indurated chancre two months before fecundation. The mother asserted that she had never had any symptoms of venereal disease, "nor was any trace of such to be found upon any part of her body."

The recent work of Bertrand[5] contains the history of a similar case, in which the child, very severely affected, recovered under the administration of bichloride of mercury.

Haase[6] speaks of a child which presented evident symptoms of syphilis at birth, which were soon communicated to the nurse. The mother, who had already had three healthy children, was not syphilitic. The father had had some venereal affection a short time before.

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[1] Tidscrift for Lakare, b. vii., No. 10, 1840.

[2] Tr. comp. des Mal. vénér. ou syphil., t. ii., p. 11.

[3] Tr. de la Mal. vénér. chez les Enf. nouveau-nés, p. 163.

[4] Gaz. méd. de Paris, 1851, p. 392.

[5] Page 331.

[6] Allgemein. mediz. Annal., February, 1829, p. 194.

Finally, if any doubts still remained, they would, I think, be dissipated by the perusal of the two following observations, in which all the precautions necessary for insuring the special health of the mother appear to have been taken.

V. Cl. Guérard[1] mentions a woman of good family and excellent reputation, who gave birth to a child which was covered with yellow spots, and had ulcers, situated chiefly on the fingers and toes, which were unanimously recognized as syphilitic. The woman had never had any affection of this kind, not even leucorrhœa. The author examined her, and did not find any suspicious appearances. The husband confessed that while on a journey, a short time before begetting this child, he had contracted a chancre. On examination he was found to have copper-colored spots on the forehead, feet, and sternal region, and to be suffering from pains in the bones. He was cured by bichloride of mercury, and the child by Hahneman's soluble mercury.

Bœhr[2] knew a Mr. W——, who got a chancre, of which he was cured by mercury. Some time after his cure his wife joined him; she soon became pregnant, and during the whole period of gestation showed no indication of syphilitic infection. She gave birth to a female child, which she suckled. When three weeks old the child was covered with deep, corroding ulcers on the buttocks, arms, and *labia majora*, and with copper-colored spots on the calves of the legs. It also had coryza, with crusts of a peculiar character. The author administered mercury to the child, and its disease, which had resisted all means previously employed, began at once to improve, and was speedily cured.

These are not the only facts which I could have collected, but they suffice to prove that the syphilis of the child very frequently acknowledges no other cause than syphilis in the father. This point being settled, another more practical and not less important question arises:

Will a man who has had syphilis, but who presents no symptom of the arsesase at the moment, beget a syphilitic child? This problem, which involves the most serious considerations of aptitude for marriage and procreation, has been variously solved. It seems natural to admit that a diathesis which does not yet manifest itself, or no longer manifests itself by sensible effects, should be less marked, and consequently less capable of transmission than one of which the symptoms are actually present. This opinion is the most general one; Rosen,[3] among others, formally avows it, and it is supported by several examples. The following is one which I have met with:

In June, 1849, a young man, Mr. D——, came into my consulting-room in tears. He was to marry, twelve months afterward, a young person to whom he had been engaged from childhood, and he had contracted a

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[1] Journ. de Siebold, t. x., § 553.

[2] Journ. der pract. Heilkunde, 1836.

[3] Rosen, 1778, p. 541.

chancre a month previously. The chancre being an indurated one I treated it with the protoiodide of mercury, and as my patient was fearful, above all, that he might not be cured by the time fixed, I readily yielded to his repeated wishes, and did not spare the medicine or limit the period of the specific treatment. A fortnight or three weeks after his first visit a papular eruption appeared, accompanied by a tubercular ulceration of the tonsils. He took mercury, under my direction, for six months, so as to affect the gums slightly several times. Being still uneasy about himself, he wished for a consultation between my worthy colleague, Dr. Bottex, and myself. For the sole purpose of satisfying the patient, Dr. B., thinking he was quite cured, advised the use of Van Swieten's drops for three weeks.

Mr. D—— married, and his wife soon became pregnant. About the third month of her pregnancy he went to the baths at Aix, and was very much alarmed, during the use of them, by the return of a well-marked papular eruption, accompanied by some mucous patches about the anus, which symptoms I had the opportunity of observing. He therefore looked forward to his wife's confinement with the greatest anxiety, as he feared to see the child covered with pustules. His fears were, fortunately, not realized. The child is at present two years old, and has always been perfectly healthy.

But if the immunity of the fœtus, under such circumstances, be possible, we should deceive ourselves, to the great prejudice of families, in believing it to be certain. Cullerier, surgeon to l'Ourcine, has told me that he believes this unfortunate power of transmitting syphilis to their children, although no traces of the disease are present at the moment of procreation, belongs to the mother alone, and not to the father. But this dangerous paradox of such a shrewd observer must be answered by facts only. The following are decisive ones:

Professor Cederschjold, whose authority I have already invoked, says that the fathers of the children which he had seen born with syphilis, although the mother was healthy, "had been treated shortly before cohabitation for primary symptoms; but that from this time they had remained free from any venereal affection, and suffered only from debility."

Mr. T—— married after having had syphilis four times, for which he had been imperfectly treated. He was weak, but did not show any specific taint. A year afterward, his wife, who had continued to enjoy good health, gave birth to a child which was to all appearance strong and healthy, but which, when three weeks old, had a well-marked pustular syphilitic eruption. It sank at the age of eleven months.[1]

But this condition of syphilitic diathesis without external manifestations present two very different periods: either the individual affected has been, at the moment of procreation, between two successive outbreaks of constitutional symptoms; or else he has been in the interval which occurs between the first appearance of a primary sore and first outbreak of sec-

[1] Troncin, De l'Extinct de la Mal. vénér., p. 50.

ondary symptoms. *Is he equally capable, in the latter case as in the former, of transmitting syphilis by the semen?* The following cases leave us no ground for doubting this:

A young man had a chancre for the first time in the beginning of the summer of 1839. He was under mercurial treatment for seventy days, and married in the month of October of the same year, without having had any symptoms of constitutional syphilis. His wife became pregnant in January, 1840. In March the husband had some mucous patches upon the tonsils, for which he again took mercury. The child was born in September, 1840. On the third day it presented patches of a dull coppery-red color, which spread over the whole body. These were accompanied by intense coryza. The child became gradually weaker, and sank in fifteen days.[1]

In 1823, Campbell, of Edinburgh,[2] attended a lady who miscarried at the sixth month. The same thing had happened to her in a former pregnancy, and occurred for the third time in 1824. The husband was a young medical man, and acknowledged having had, six months before marriage, a sore which had been diagnosed as a chancre by himself and by some of his medical acquaintance. No other symptom manifested itself up to the time of his marriage. Campbell could not detect any evidence of syphilis in either of the parents. He placed them both under the influence of mercury. The lady soon became pregnant again, and gave birth at the full time to a well-formed male child, which lived without having syphilis.

Besides the very positive answer which these observations furnish to the last question, I shall draw from them two practical conclusions. The first is, that mercurial treatment, although commenced on the first appearance of a primary sore and long continued, neither prevents nor corrects with certainty the special perversion which the generative function has undergone. The second, to judge, at least, from the facts just mentioned, is that the fœtus does not appear to be infected less severely by a father in the incubation period of syphilis than by one in whom the disease is fully developed. I shall also refuse, for the present, to accept the opinion which Prieur[3] quotes from Ricord's lectures: "The conditions transmitted are those of the parents at the moment of procreation; if the syphilitic affection be recent, the influence is less than if severe symptoms had gone before."

Nor is it necessary, after the preceding observations, to combat the opinion of those who sustain that a father cannot transmit syphilis to his child, because the semen of an individual so affected is *incapable of causing fecundation.* The responsibility of such an opinion must be left to the speculative writers of the last century, by whom it was advocated. I cannot quit this part of the subject without some words on a question which has been raised by Hunter and Nisbett:

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[1] Basserean, Tr. des Affections de la Peau. Symptôm. de la Syphilis, 1852, p. 540.
[2] London and Edinburgh Monthly Journal, 1844, p. 514. [3] Thèses de Paris, 1851.

Can a man who is affected with syphilis and has connection with a pregnant woman communicate the disease to the fœtus without infecting the mother? Strange as this question may appear to be, it is nevertheless necessary to discuss it, as it has been seriously entertained by several writers on syphilis. As early as 1698, de Blegny[1] remarked that "we frequently see children born with syphilis, although the semen which had induced conception was pure, because the mothers had cohabited during pregnancy with men imperfectly cured of the same disease." Hunter[2] says that "the contagious matter may, without setting up any syphilitic action in the tissues of the mother, be conveyed to the fœtus in the same state in which it has been absorbed, and develop in it the same morbid action which it would have developed in the mother." Nisbett also thinks that "the venereal poison which circulates in the general mass may infect the fœtus without affecting the mother." This idea of an influence exercised by the father upon the already-formed fœtus is so general, that barbarous nations believe in its continuance beyond the moment of birth. Among the Caraibans, as we are told by M. Lucas,[3] the father, immediately after the delivery of the mother, "keeps his bed and abstains for six months from eating birds or fish, for fear the new-born infant should participate in the defects natural to those animals."

Moreover, this action of a poison capable of affecting the fœtus without compromising the mother, is rendered more than probable by daily experience. If small-pox may be present in the fœtus, while the mother remains exempt, instances of which have been observed by Mead,[4] Deneux,[5] Piednagel,[6] Lebert, Depaul,[7] and Simpson,[8] why may not a very analogous agent, the poison of syphilis, possess the same property, and produce its effects in the product of conception alone? Lawrence, arguing from this analogy with small-pox, thinks that the father may, without communicating the disease to the mother, transmit syphilis to the fœtus with which she is pregnant.

The following is a case published in support of this theory.:

A man affected with primary syphilis had connection with his wife when she was in the sixth or seventh month of pregnancy. She was not infected. At the full time she was delivered of an infant which presented, soon after birth, well-marked syphilitic pustules, and died in nine days. The father soon afterward had symptoms of constitutional syphilis, and was cured of them by mercurial inunctions.[9]

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[1] Page 101. [2] Traité de la Mal. vénér., 1852, p. 564.
[3] Traité de l'Hérédité, t. ii., p. 12.
[4] Traité de la petite Vérole, chap. iv., p. 337.
[5] Gaz. Méd de Paris, 1852, p. 14.
[6] Gaz. des Hôp., 1845, p. 304. [7] Gaz. Méd. de Paris, 1849, p. 252.
[8] Edinburgh Monthly Journal of Medical Science, April, 1849.
[9] Albers, Ueber Erkenntniss und Kur der Syphilis, Hautkrankheit, p. 19.

In facts of this kind we must distinguish between appearance and reality, between the improbable inference drawn from them and the rational explanation of which they admit. Serious men will surely regard as fabulous the hypothesis of an influence exercised by the vitiated semen of a man upon a fœtus of some weeks or months. Between two such beings no direct relation is possible. But may not the organism of the mother serve as a mode of communication from the one to the other? May not her circulating system be capable of so circumscribing and isolating the poison as to transmit it from the man with whom she cohabits to the infant which she bears in the womb, without allowing it to be developed in and to infect herself? Numerous analogies forbid an absolutely negative answer to this question. From the observations of Mayo, Giles, Guérin, Devay, Gillivray, Allen Thompson, d'Olgive, and Fournet, on the transmission of certain characteristics in animals and of certain diseases in the human race, it cannot be doubted that a healthy widow, who takes for her second husband a man whose sanitary condition is unexceptionable, may from this source have children tainted with a defect inherent in the former husband. But what else is this than the transmission of a morbid influence directly from the father to the child through the organic system of the mother, acting as a simple conductor, and not as a participating medium? I shall quote, in reference to the kind of morbid influence here specially in question, an instance which proves this mode of transmission:

A man had intractable syphilis, for which he was treated at the Hôpital du Midi, and of which he died. While he was suffering from this disease his wife gave birth to a female child, which had, at the age of two months, ulcerations about the vulva, and died without having had any remedy administered.

The wife asserted that she had never, at any period of her life, had syphilis. Eighteen months after her first confinement she married a healthy man, and had a child by him which presented spots upon the genitals and forehead similar to those of the child by her former marriage. Not being able to get it cured, she went into l'Ourcine with it. At the age of four months and a half this child had well-marked syphilitic tubercles on the forehead, mouth, thighs, buttocks, and scrotum.

A careful examination of the woman gave no evidence of any present or previous venereal affection. On the fore part of the neck a small patch of granular redness was observable.[1]

These details are exact and of a nature, as it appears to me, to bring

[1] This case is reported by Vidal (Gaz. des Hôp., 1841, p. 545). He considers the *granular redness* of the neck as sufficient evidence of the existence of a syphilitic diathesis in this woman. But can a lesion so slight, and so evidently the result of pure and simple inflammation, legitimately be made to bear such a signification? And shall we not be interpreting the case more correctly if we place it among the number of those which prove the power possessed by the economy of the mother of transmitting (without becoming itself implicated) the poison of syphilis from the father to the child?

conviction. But since the vitiated semen of a first husband may leave behind it in his wife an impression capable of infecting her subsequent children, the offspring of another than himself, why may it not make this same impression in the case of an infant recently engendered, and which has still to undergo, for six or seven months, the influence of nutrition through the placenta? I have no wish to deny the differences which exist between the two cases; but are they so wide that, the one being now acknowledged as almost proved, we are justified, without further evidence, in regarding the other as improbable or absolutely impossible?

We may draw, as a practical conclusion from the foregoing data, an inference opposed to most of the doctrines now in vogue, viz., that when a man affected with syphilis has had connection with a pregnant woman, especially if she have not been pregnant long, we must not, even if she remain healthy, calculate with certainty that the child will be exempt; and that it will be prudent to watch it carefully during the first months of its life.

[Since M. Diday published his book, many new facts and cases have been recorded bearing upon this particular point in the etiology of hereditary syphilis. The cases adduced by our author are by no means convincing of the correctness of the theory which heads this section of his book, namely, the influence of the father as the direct cause of the syphilis in the child; the details furnished are too meagre and wanting in clearness of detail. This is peculiarly the case in the histories furnished by Swediaur, Bertin, Depaul, and Haase. The women in many cases do not seem to have been examined, and when they have been the result is stated in the few words that nothing was found upon them. This is not sufficient testimony, nor can it be admitted as proof, that the woman has not at one time suffered from syphilis, as a person may have the disease in its latent period when no symptoms are present and perhaps no trace of the previous symptoms are left to tell of the disease. This condition of things commonly exists during the early stages of syphilis, before the disease has reached the ulcerative stages, when indelible cicatrices result to tell the story of an antecedent syphilis. Within the last few years this question has attracted marked attention from syphilographers, and many cases now exist in medical literature which would seem to support the opposite theory, that the influence of the father in conveying the disease to his offspring is rather indirect than direct; that is, that it is only when he infects his wife that the disease is transmitted to the fœtus, and that the mother is the real source of the syphilis which appears in the child, either at its birth or afterward.

Hence many syphilographers believe that if the mother escape infection the child will not suffer from syphilis, and many cases have been reported in support of this belief. Diday himself, when he comes to give us his own experience, furnishes just such a case, as will be seen on referring to the history reported on page 17. The man contracts syphilis one year before

marriage, and at the time of this ceremony shows no symptoms, having undergone a course, more or less thorough, of mercurial treatment. He impregnates his wife during this period of immunity from the disease, and during the third month of her gestation he develops new manifestations of his disease in the shape of a papular eruption and mucous patches about the anus. His wife, who apparently undergoes no treatment, goes through the period of gestation safely and is delivered of a child, who, contrary to the expectations of the father, shows no signs of syphilis at birth nor at any time within a period of two years. This certainly is not what should be expected. M. Diday, however, explains it on the ground that "a diathesis which does not yet manifest itself, or no longer manifests itself by sensible effects, should be less marked, and consequently less capable of transmission, than one of which the symptoms are actually present."

In 1854 M. Cullerier read a paper before the Société de Chirurgie de Paris upon this question of the paternal influence (through the semen) in contaminating the ovum and procreating a syphilitic child, and stated it as his belief that such influence was negative. The father could beget a syphilitic child, but only by giving the disease to the mother; if on the other hand the mother escaped infection, the child was safe, no matter if the father had syphilis. He gives the history of two cases, which is briefly as follows:

Case.—*Father's Condition.*—An initial lesion, followed by a squamous syphilide, mucous patches of the anus, ulcerations of the mouth, impetigo of the scalp, alopecia, and cervical adenitis. After fifteen days' treatment he married, and in a short time impregnated his wife.

Wife's Condition.—Exhibited no symptoms of syphilis up to eighteen years.

Child's Condition.—Exhibited no symptoms of syphilis up to eighteen years.

Case.—*Father's Condition.*—Initial lesion six months before marriage, followed by a macular syphilide, cervical adenitis, and pharyngitis. During this condition of things he impregnated his wife.

Wife's Condition.—Exhibited no signs of syphilis during fifteen years' observation.

Child's Condition.—Exhibited no signs of syphilis up to fifteen years, after which no further watching was continued.[1]

This paper of Cullerier was followed in 1860 by one from the pen of M. Notta on the same subject, giving details of eight cases where the fathers have syphilis, the mothers not, and where the children escape infection.

Case.—*Father's Condition.*—An initial lesion and syphilides of the skin. At the time of marriage he had exostoses of the ulna and a syphilide of the forearm. Four years later he had a double orchitis and a syphilide on the arm.

[1] Précis inconographique des maladies vénériennes, pp. 87 and 88. Paris, 1886.

Mother's Condition.—She exhibited no signs of syphilis during seven and a half years of observation.

Children's Condition.—The two children showed no signs of disease. They were aged respectively six and a half and seven and a half years.

CASE.—*Father's Condition.*—An indurated chancre, followed by mucous patches and alopecia. One year afterward all the symptoms had disappeared and he married. Two months after marriage he had mucous patches of the tongue, which lasted for one year and a half. Free from symptoms, he impregnated his wife, and a month later he had a palmar syphilide of the squamous variety.

Wife's Condition.—Exhibits no symptoms of the disease during a period of twenty-two months.

Child's Condition.—The child shows no evidences of syphilis during a period of twenty-two months.

CASE.—*Father's Condition.*—An indurated chancre. Three months after marriage mucous patches of the scrotum, in the throat, and about the anus. At this time his wife became pregnant. His mucous patches continued through this and her second pregnancy.

Wife's Condition.—She exhibited no evidence of syphilis during a period of three years.

Children's Condition.—The two children have shown no signs of syphilis; aged three and two years respectively.

CASE.—*Father's Condition.*—An indurated chancre, followed by mucous patches of the scrotum and anus and articular pains. At the time of marriage he was free from symptoms. Two months after marriage he had a squamous syphilide of the scrotum, which continued through his wife's pregnancy.

Wife's Condition.—She had shown no signs of syphilis during a period of seven months.

Child's Condition.—Showed no signs of syphilis; aged seven months.

CASE.—*Father's Condition.*—An initial lesion and early subsequent symptoms. Three years after marriage he had ulcerating gummata of the arm.

Wife's Condition.—She has shown no symptoms of disease during a period of twelve years.

Children's Condition.—There were six; none of them showed any symptoms of syphilis. The ages of the first two are given, viz., twelve and eleven years respectively.

CASE.—*Father's Condition.*—He had a phagedenic chancre, which was followed two years later by orchitis and a papular eruption. These came on at the time of the wife's confinement.

Wife's Condition.—She has exhibited no evidences of syphilis during a period of fifteen and a half years.

Child's Condition.—The child has shown no signs of the disease during the same period.

CASE.—*Father's Condition.*—An indurated chancre, followed by mucous patches of the throat, a papular eruption of the scalp and cervical adenitis. Two years later he had cerebral symptoms indicative of a tumor of the brain with incomplete hemiplegia, headaches, and nocturnal pains.

Mother's Condition.—She has exhibited no symptoms of syphilis during a period of fifteen months.

Child's Condition.—The child has shown no signs of the disease during the same period.

Case.—*Father's Condition.*—An indurated chancre followed by mucous patches about the anus, nocturnal pains, alopecia and cervical adenitis.

Wife's Condition.—She has shown no signs of syphilis during a period of two years.

Child's Condition.—The child has been free from any evidences of the disease for the same length of time.

In 1862, M. Charrier published in the Archives Générales de Médecine the histories of four cases of paternal syphilis where neither the wives nor the children suffer.

Case.—*Father's Condition.*—The initial lesion occurred one month before marriage and was followed by a macular syphilide.

Wife's Condition.—She has been free from any sign of syphilis during a period of six years.

Children's Condition.—There were three, none of whom showed any signs of the disease. They were aged respectively six, four, and two and a half years.

Case.—*Father's Condition.*—He had had an initial lesion succeeded by macular and pustular syphilides.

Wife's Condition.—She has exhibited no evidences of syphilis during a period of four years.

Child's Condition.—The child has been free from any manifestations of syphilis for a similar period.

Case.—*Father's Condition.*—He had suffered from a pustulo-crustaceous syphilide and osteocopic pains. At the time of his wife's pregnancy he was the bearer of a node of the clavicle, and suffered from nocturnal cephalalgia.

Wife's Condition.—She has exhibited no evidences of the disease during a period of eight months.

Child's Condition.—The child showed no signs of syphilis during a similar period.

Case.—*Father's Condition.*—He had mucous patches about the anus three months after marriage. At the time of his marriage he had a specific ulceration of his tonsils. Neither the mother nor child have shown any signs of syphilis. The age of the latter is not given.

Case.—*Father's Condition.*—Before he contracted syphilis he was the father of two healthy children. His initial lesion was followed by an impetigo capitis and a cervical adenitis. The year after he had a pustular syphilide, and again a year later exostoses.

Wife's Condition.—She has shown no evidences of disease during a period of two years.

Child's Condition.—The only one born since the father contracted syphilis has been free from any signs of syphilis for the same length of time.

These recorded observations are still further increased by one of M. Mireur, which was published in 1867 ("Essai sur l'hérédité de la syphilis," par le docteur Hyppolyte Mireur, Paris), and is confirmatory of the views revived by Cullerier neveu, as to the nullity of the influence which the father's syphilis plays in producing syphilis in the offspring without a concomitant disease in the mother.

Case.—*Father's Condition.*—In January, 1863, the man had an initial lesion followed by a maculo-papular eruption, ulcerations of the throat, and

papules of the scalp. In December, 1863, after a vigorous treatment and believing himself well, he married.

Mother's Condition.—She has exhibited no evidences of syphilis during a period of two years.

Child's Condition.—The child was born in October, 1864. Up to the end of 1866, two years, it had presented no evidences of syphilis. At that time (end of 1866), the man brought his child to Mireur with an excoriation of the lip about one centimètre (nearly two-fifths of an inch) in diameter, the surface of which was depressed, its tint was livid, and its base manifestly indurated. In fact, Mireur regarded it as "un chancre infectant." Associated with the lesion of the lip was a premaxillary adenitis, and in due time a macular syphilide of the body and mucous patches of the anus made their appearance.

The father's condition deserves mention. Here are Mireur's words: "Toward the end of 1866, M. C——, who yet retained vague souvenirs of his previous disease, and who was delighted at the wonderful health of his boy, had a slight erosion at the anterior portion of his lower lip. Thinking nothing of this little local affair, which remained perfectly indolent, M. C. did not deprive himself of the pleasure of kissing his child." The disastrous result is given above.

Here is a peculiarly pretty case: A boy is born of a syphilitic father, and if the parental theory is correct, the child ought to have had syphilis. He reaches the age of two years without developing any symptoms of the disease, when in an evil moment he acquires syphilis from his father by a kiss, thus disposing of any question, if such could be raised, of latent syphilis in the boy. The mother, important point, shows no evidences of syphilis.

In 1872, the late Dr. John S. Parry, of Philadelphia, published two cases of his own in the *Philadelphia Medical Times*.

Case.—*Father's Condition.*—He had an initial lesion in 1866. Three months later he had a squamous eruption on the face, trunk, and extremities. Shortly after the disappearance of these lesions he married. Later on (after the child's birth), he had other syphilides of the skin and pharyngitis syphilitica.

Wife's Condition.—She had shown no signs of the disease during a period of five years.

Child's Condition.—It was born within a year after the father's marriage, and up to the age of five years had shown no signs of syphilis.

Case.—*Father's Condition.*—He had an initial lesion in 1861. In 1862, he was "wasted almost to a skeleton, having nodes upon various parts of his body, while the nose and hard palate were entirely destroyed." He married in 1867.

Wife's Condition.—She had exhibited no evidences of the disease during a period of three years.

Child's Condition.—It also was free from any signs of the disease for the same length of time.

In 1873, M. Langlebert ("La syphilis dans ses rapports avec le mar-

riage," Paris, 1873) gives the histories of two cases in which, notwithstanding marked paternal syphilis, the mother and children both escape infection.

Case.—*Father's Condition.*—In 1861 he had an initial lesion, which was followed three months later by a papular syphilide of the skin, mucous patches of the throat, and by alopecia. He married at this time.

Wife's Condition.—She had shown no signs of the disease during a period of seven years.

Children's Condition.—Two children were born, and up to the ages of seven and a half and four and a half years, neither had shown the slightest sign of syphilis.

Case.—*Father's Condition.*—In 1864 he contracted syphilis, and after sixteen years' treatment he married. He had several relapses, and in 1869, at the fourth month of his wife's third pregnancy, he had an ulcerating periostitis of the right tibia.

Wife's Condition.—During a term of six years she had shown no signs of syphilis.

Children's Condition.—There were three children, the eldest one six years and the youngest three. None of the three have shown any symptoms of the disease.

It is not necessary to adduce any more cases to show that men may have syphilis at the time of marriage, and even at the time of their wives' pregnancies, and yet be the fathers of healthy children, who are free from all taint of the disease, and that without invoking the question of illegitimacy. In looking over the histories given, one fact stands prominently forward, to wit, that in no case has the mother been infected. This is an important point, because it diminishes the chances of procreating diseased children; otherwise no man who had at any time contracted syphilis could ever have a reasonable assurance that his children would be born free from his disease. Whether future cases will be seen where the mother can be positively proved never to have had syphilis, and yet can procreate syphilitic children, is a point which no person can state with certainty; at any rate, all we can say now is that with our present knowledge on the subject, the weight of evidence is against the theory that a healthy woman—by that I mean one who is free from syphilis—can beget syphilitic children.—F. R. S.]

II.—*Influence of the Mother.*

A woman suffering from constitutional syphilis may affect the fœtus in two different ways: either by throwing off a vitiated ovum, or by furnishing it, during pregnancy, with elements of nutrition imbued with the specific diathesis. Hence arises two possible infecting conditions in her: either she had syphilis at the moment of conception, or she contracted it subsequently. Let us study these two different cases one after the other.

A. *Influence of the mother infected before the moment of conception.*—This influence is clear, patent, and undeniable. Founded upon reason, supported by innumerable facts, no author has ventured to doubt it, and I know of no writer, except Cazenave,[1] who has described it as less potent than that exercised by the father.

However, without wishing to dispute the conclusions, from daily experience, I must observe that the proof of this apparently so simple fact is almost inevitably subject to a grave cause of error. A woman affected with syphilis gives birth to a syphilitic child. The paternity appears clear, and the mother is accused—the mother who is before our eyes with symptoms or traces significant of the disease. But who shall answer for the father, who is absent, or unknown, or cured at the time of delivery? Who shall prove that it is not by his act that the diathesis has been transmitted to the product of conception? How can we know whether he has not at least had a share therein; or whether, without the intervention of vitiated semen, the woman, although diseased, might not have thrown off a healthy ovum, and borne it as such to the full term of gestation? The fact is the more difficult to verify, because it is most frequently the same man who has communicated the disease to the woman who becomes the father of her children.

To solve this problem, therefore, it will not suffice to accumulate promiscuously cases in which a syphilitic child has been born of a syphilitic mother, but we must rather profit by those rare cases in which, the influence of the father being accidentally annihilated, it is possible to determine more exactly the part played by the mother.

If, for instance, a woman who has contracted syphilis from her first husband becomes a widow and marries another man free from such antecedents, and if the children which she has by this second marriage present manifest symptoms of syphilis, does it not appear evident that they can have derived it from the mother alone? And this concatenation of circumstances is frequently met with. The following history furnishes a proof sufficiently circumstancial to deserve notice.

The widow C—— consulted M. Vassal in September, 1779 (*sic*, 1799?), on account of two buboes and sixty venereal warts about the vulva and perinæum. He gave her mercury for three months. She married again, and became pregnant in 1801. The child, given to nurse to a woman of whose healthy state the author had convinced himself, presented some moist pustules about the genital organs after the expiration of thirty-five days. About the same time the husband died of fever, without ever having had any symptom of syphilis.

She married once more, 1804, and gave birth to two weakly, wrinkled children, whose skin peeled off, and who were attacked by jaundice on the fifth day. One sank on the ninth, the other on the twelfth day. In 1807

[1] Traité des Syphilides, p. 134.

she became pregnant for the fourth time. The child, intrusted to a healthy nurse, had, at the expiration of thirty-two days, thick crusts on the forehead and at the roots of the hair, with copious fetid suppuration. It was treated with mercury and recovered. The mother, although she had for a long time had no traces of syphilis, and had never communicated the disease to any of her husbands, determined, for the sake of her possible future children, to go through a course of mercury.[1]

Many observations of this kind might be quoted; but, as proofs of the exclusive infecting power of the mother, they would always remain open to one serious objection. For nothing forbids the supposition that here, as in the cases mentioned in the preceding chapter, it is the influence of the former father which, persisting in the organism of the mother, has alone conveyed the venereal taint to her subsequent children. We must examine the question, therefore, under different conditions.

But to clear up this difficulty, the best means is the history of cases in which syphilis has been communicated by lactation. Thus, a woman, previously healthy, begins to suckle a syphilitic child, and the disease is communicated to her. She then becomes pregnant, and is delivered of a syphilitic child. This series of phenomena evidently contains the proof I was in search of, for the husband of the nurse has remained out of the field of the succession of syphilo-genetic phenomena; he has had only an irreproachable share in the procreation of his child. The mother alone was diseased, and that recently, and in a manner which leaves neither doubt, nor suspicion, nor mystery. To her alone, therefore, must we impute the infection of the child to which she has given birth.

Examples of this succession of events are by no means rare, but it will only be necessary to quote a few such to show that they have been recognized by the most competent observers.

A healthy nurse had suckled with good effect for three months the female child of M. de B——, when she took a second child to nurse, which, fifteen days after birth, had mucous patches about the vulva and mouth, and died in three months.

The woman, three months after the death of the latter child, observed, on her own body, a great number of mucous patches about the genital organs. Six months afterward, having been delivered of a female child, her infant, which at birth had every appearance of health, and which she suckled also, presented, at the age of two months and a half, about thirty mucous patches on the vulva, perinæum, and upper part of the thighs.[2]

Lallemand[3] relates the case of Madame de C——, the wife of a colonel who had had syphilis several times, and who had communicated the disease to her. Their children presented all the symptoms of this disease,

[1] Vassal, Mém. sur la transmiss. du virus vénér. de la Mère à l'Enfant, Paris, 1807, p. 40.

[2] M. Cazenave, Revue Méd. de Paris, 1852, p. 409.

[3] Journ. Univ., t. xxvii., p. 132.

of which the first three died. The fourth child had the same symptoms—copper-colored spots on the skin and pustules about the anus. The nurse to whom it was intrusted had ulceration of the breast, and was imperfectly treated. She then became pregnant and gave birth to a weakly, emaciated child, which lived only five days. At the expiration of fifteen months she had a second child, which continued healthy for three months, but then presented brown spots and tubercles about the lips and fundament, which M. de C—— recognized as exactly similar to those which had appeared in his own children. Lallemand subjected this woman to a methodical and complete course of treatment. She has since borne a child which, says the author, is now eighteen months old, and has never exhibited the least trace of venereal affection.

Bertherand[1] relates the case of a healthy nurse, whose antecedents were good, and to whom the child of a Mrs. O—— was given to nurse. Soon afterward she suckled another child, which had syphilitic tubercles in the groins and a purulent discharge from the mouth and nose, and died in three months. The nurse had mucous patches about the vulva. She ultimately became pregnant and was delivered, says Bertherand, of a syphilitic child.

Lastly, Bardinet[2] gives the history of a woman, Fra——, who, having taken to nurse a child affected with hereditary syphilis, had, at the end of two months, specific ulcers on the breats. Becoming pregnant afterward, she was delivered of a still-born child. Some time afterward she again became pregnant, and gave birth to a child in which were developed, about the third month, mucous pustules at the margin of the anus, and ulcers in the throat.

But a still more convincing proof in this respect is that observed by Bergeret, in which the child of a woman, C——, died of constitutional syphilis at the age of seven weeks. But the woman C—— had herself contracted the disease from a nursling, to which it had been communicated by a neighbor, the woman N——, who had taken it from a nursling infected from being suckled by the woman P——, which latter individual had herself been infected by a strange nursling.[3] From this fearful series of transmissions we will, at this moment, infer nothing beyond the possibility of the infection of a child by means of an influence which has acted exclusively upon the mother. It must be added, however, that before she was attacked by syphilis the woman C—— had had five children, all of robust constitution and excellent health.

To resume my subject, the cases of syphilis transmitted to a child by a mother who had been infected by her husband are so numerous as to

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[1] Précis des Mal. vénér., 1832, p. 336.

[2] Bardinet (De la Syphilis héréditaire et de sa transmissibilité). This remarkable monograph, destined especially to prove the communicability of hereditary syphilis by lactation, was presented to the Academy of Medicine in Paris, on December 28, 1852. The author placed this work at my disposal before its publication, with a readiness for which others besides myself have cause to be grateful. But whatever interest my readers may feel in the observations which I have felt authorized to borrow from him, it cannot approach the impression which this work, so rich in facts and so powerful in its deductions, cannot fail to make when known in its entirety.

[3] Le Moniteur des Hôpitaux, November 29, 1853.

have sufficed to bring conviction of the reality of infection by an ovum tainted with this poison. To me, however, they render the fact probable rather than certain; but if we accord their true value to those last mentioned, I cannot think that the theory to which they have reference will any longer be disputed.

[It seems an excess of caution in M. Diday to say that it is "probable rather than certain" that a mother who is the subject of syphilis transmits her,disease to her offspring, in view of the numerous cases which have been recorded in proof of this means of conveyal. It is only necessary to bear in mind the cases of Notta, Charrier, Oewre, and many others, to show that syphilis in the mother means syphilis in the child. There is one case of Charrier which deserves special mention because it illustrates the point in question, and also because it bears so strongly upon the question of the fallacy of the author's belief in the paternal transmission of syphilis. The case briefly is as follows:

Father's Condition.—He had a palmar syphilide.
Wife's Condition.—She had mucous patches during her pregnancy.
Children's Condition.—Three children were born. One died one month after birth with syphilitic symptoms. Two miscarriages occurred, one at four months, the other at seven. The latter was born with mucous patches about the anus. Here is evidently a case where the wife was infected with syphilis and transmits the disease to the children, but there is another side to this history which is noteworthy. The man had a mistress. The wife, as noted above, had a syphilis contracted from her husband and bears one living diseased child, and has two miscarriages. The mistress did not contract syphilis, but she also had a living child, which during the period of three years showed no signs of syphilis, and this infant was born within a fortnight of the time that the wife was delivered of the seven months' foetus with the anal mucous patches. Objection may be made that this child was by some other man than the putative father, but M. Charrier anwers that objection in the following words: "This child resembles his father in every respect, even to having a very peculiar conformation of the thumbs which the legitimate children also presented."

Here we have a history of two women impregnated by the same man, who himself is the subject of syphilis. One of these women contracts the disease; the other does not. The syphilitic woman brings three diseased children into the world, while the woman who escapes infection gives birth to a healthy child, and this child remains healthy, showing no signs of the disease for a length of time which would preclude any possibility of subsequent manifestation of syphilis from the side of an hereditary infection.

The other case is interesting as proving that the mother was the sole cause of the syphilis in the child.

Case.—*Father's Condition.*—He never had syphilis.
Wife's Condition.—She suffered from a macular syphilide before mar-

riage. At the time of marriage she had an impetigo of the scalp. Pregnancy occurred one month after marriage.

Children's Condition.—Two miscarriages occurred at the third month, both fœtus being covered with copper-colored spots.—F. R. S.]

B. *Influence of the mother infected after conception.*—Several writers have restricted the name of *congenital* syphilis to the affection which depends upon this cause, giving that of *hereditary* to that which is communicated by parents suffering from constitutional syphilis previous to fecundation. Of these two varieties they make two species, as different in regard to the progress, symptoms, and importance of the disease, as in reference to its etiology. We shall see, further on, when treating of the evolution of this affection, what is to be thought of such a theory. At the present moment we must occupy ourselves with a single object, viz., to establish the existence of this cause of infection, and to determine the conditions under which it realizes its effects.

I had collected a certain number of instances of fœtal syphilis resulting from an infection communicated to the mother ulteriorly to conception, but as no one now doubts the fact, it seemed entirely superfluous to swell my work with these proofs. Who now disputes this influence exercised upon the child by the impure materials of nutrition thus furnished to it by the circulation of the mother?

Another question in reference to this subject is of more direct practical interest: *Up to what period of pregnancy can syphilis, then first contracted by the mother, be communicated to the fœtus?* In other words: *Is there a period of pregnancy after which syphilis contracted by the mother can no longer be transmitted to the fœtus?*

On examining more closely the relations which exist between the embryo and its mother, and the successive modifications which these relations undergo, we learn that the more gestation advances the more do these bonds become loosened. After the formation of the blastoderm, the nutritive fluids pass directly through the membranes of the ovum. From the third week to the fortieth day the umbilical vesicle contributes to the vegetative existence of the embryo, by means of the omphalo-mesenteric vessels. As it disappears it is replaced by the allantois, the first commencement of the circulation between the mother and her fœtus. At a later period the allantois, pushing back the chorion, becomes covered with villosities at the point where the latter adheres to the uterus, and then the placental circulation is established with its principal organ. With the placenta, which holds blood in reserve, with a heart which throws blood into all parts of its body, the fœtus has attained a position already less dependent, in anticipation of the moment when the exercise of its digestive functions and the play of its lungs shall permit it to fulfil its own requirements. Thus the ovum, at first simply a portion of an organ of the mother, is nourished, as it were, by imbibition; it then becomes the seat

of a new vascular development; it soon acquires two sets of vessels, and, subjecting the blood which is sent to it to a certain degree of elaboration, finally leads an organic life more and more independent, until it becomes entirely separated from the being upon which it had been grafted.

In these transformations we easily recognize four very distinct periods in reference to the dependence of the embryo upon the mother. At first it is but a portion of her substance; in the second place, and during some time, it subsists and grows exclusively at the expense of the albuminous matter by which it is surrounded in the Fallopian tube, and of the vitelline membrane. Hence I am convinced that if a woman contracted syphilis two or three days after conception, and was rapidly cured, the child would not show any symptoms of the disease. If is true, indeed, that this hypothesis is not of a nature ever to receive the sanction of positive experience, but I believe that it furnishes a logical explanation of more than one case in which, from our not admitting it, we are surprised to see a woman who has contracted syphilis during the first weeks of her pregnancy afterward give birth to a healthy child.

At a third period of gestation the two vascular currents, that of the embryo and of the mother, unite, and the relations become more intimate and direct. It is then that transmission by the blood—true contagion, whatever may be said otherwise—becomes possible, and actually occurs. At this period, if the mother be really the subject of the diathesis, we cannot well understand how the fœtus can escape this source of poisoning, this forced influence, so to speak, which is constantly distilling, drop by drop, as it were, a poison into its veins, against the introduction of which nature has not furnished it with any means of defence.

The fourth period has no fixed limit, or at least no distinct starting point, being connected by a gradual transition with the preceding one. The fœtus frees itself more and more from the maternal envelope, and abortion at this period, from causes affecting the mother, becomes much more rare. But at what moment does this independence reach a point at which the fœtus is no longer subject to syphilitic disease, then first contracted by the mother? This we do not know; but what is certain, and what the opinions of the best observers and daily experience confirm is, that during the last months of pregnancy this influence becomes weakened and eventually annihilated.

I am glad to be able to invoke in support of these laws, deduced clearly from physiological data, an authority so decisive on such questions as that of Ricord. Led probably by the same reasoning, he has arrived at the same conclusions concerning the independence of the ovum in the earlier periods of pregnancy. "When it is the mother who infects the fœtus," he wrote to me on March 16, 1849, "*it is only at a certain period of gestation that this occurs;* the ovum does not appear to have the same influence, or to be *at the first* under the same conditions, as the semen or

fecundating matter." This passage, in spite of its brevity, will be a sufficient answer to the question put by Prieur,[1] whether "there are any well-authenticated cases on record of mothers affected with secondary syphilis, during the first months of pregnancy, who did not transmit the disease to their children?" Except in reference to the first weeks of pregnancy, however, we are entirely of the opinion of Prieur as to the almost certain transmission under such circumstances.

As for the immunity peculiar to the other extremity of gestation, it equally has its advocates among the most competent observers. "Until the sixth month," said Ricord to his clinical class in 1847, "the mother may transmit constitutional syphilis acquired during gestation; but if the infection of the mother take place during the last three months, *it is not certain* that transmission is possible." Prieur also, who has specially treated on this subject, writes: "We have no example of hereditary syphilis in which the mother was infected during the last two months of pregnancy." I have felt anxious to establish the correctness of this principle, which may be said to have been, hitherto, rather accepted than demonstrated experimentally.

It is remarkable enough, indeed, that no authentic observation has been advanced to refute this law. Facts are wanting, it is true, to prove that a pregnant woman can, with impunity to the child, contract syphilis two or three months before the full term of gestation. But why is this so? Simply because the child is then born healthy, and it is not usual to publish observations in which the absence of disease in the subjects of them is the only circumstance to be noted. But the counter-proof is easily furnished; for if we take the trouble of examining all the cases of children infected in this manner, where the period of infection of the mother has been observed, we shall recognize that it has always occurred before the seventh or eighth month. Starck[2] saw a young servant woman, *four months pregnant*, who contracted a primary chancre, of which she was cured before the seventh month, and was delivered at the full time of a little girl who had an ulcer on the *velum palati*, and copper-colored spots on various parts of the body. Gilbert[3] mentions a woman twenty-five years old and *six weeks pregnant*, who cohabited with a man suffering from syphilis, and afterward had pustular ulcers on the *labia majora*. After a treatment of sixty days' duration in the venereal hospital in Paris, she was delivered of a weakly child in the seventh month. At the end of four weeks, large red, moist, and tubercular pustules appeared upon the scrotum, anus, and inner surface of the thighs of the child, which infected its nurse. The woman G——, mentioned by M. Depaul,[4] had contracted a chancre *in the second month of her pregnancy*. Three months afterward she had pustules on the genitals.

[1] Thèses de Paris, 1851, p. 28.

[2] Edinb. Med. and Surg. Journal, 1851, p. 366.

[3] Vassal, op. cit., p. 50.

[4] Gaz. Méd. de Paris, 1851, p. 472.

In the eighth month she was delivered of a female child, which died with syphilitic symptoms on the skin and in the lungs. Marie Des——, whose case has been related by Bertin,[1] had always enjoyed excellent health until, *about the middle of her first pregnancy*, she observed some pimples and a discharge from the vagina. She was delivered, in the sixth month, of a still-born child, and afterward bore others which presented evident signs of constitutional syphilis. Another woman[2] had had, when pregnant *three months and a half*, a chancre on one of the *labia majora* and ulcers on the tonsils. In spite of a long-continued treatment by Van Swieten's drops, her child was affected, three weeks after birth, with pustular ulcers on the buttocks. Another woman [3] had been pregnant six weeks, when she was attacked by pustules on the *labia majora* ; she miscarried at four months and a half. P. Dubois [4] has published the case of a woman, aged nineteen, who contracted, at the fifth month of pregnancy, a primary sore on the lower lip, which was soon followed by general symptoms. She was delivered of a child, which died on the eighth day with pemphigus and sanguineous infiltration of the lungs. Mr. P——, after having had a primary sore for some days, had connection with his wife when she was in *the seventh month* of pregnancy, and gave her a similar sore. Beaumès [5] treated them both with Van Swieten's drops and sudorifics. The mother had, nevertheless, copper-colored papulæ on the forehead, and ulceration of the tonsils. She was delivered of a child apparently healthy, which was given to nurse to a young woman, in whom, when examined most minutely by Beaumès, no disease was discovered. At the end of thirteen days the child had pustules of syphilitic ecthyma on the buttocks, chest, and cheeks. It was cured by mercurial treatment. Michon and Bouchut [6] saw at " La Pitié " a woman who had contracted syphilis *in the first month of pregnancy*, and had had flat pustules on the body and scalp. The child was born at seven months, with mucous patches, and red, brownish, copper-colored pustules on the arms and legs, and onyxis on all the fingers and toes. It lived only three days. The autopsy did not show any visceral lesion. Marie Fill——[7] was affected, in the *sixth month* of pregnancy, with pustules more or less raised on the whole surface of the labia, perinæum, and anus. She was not submitted to any treatment. She was delivered, at the eighth month, of a little girl who had syphilitic pustules on the buttocks and about the anus when eight days old, and was cured by inunction. Madame B—— (a patient of my own) had from contagion mucous tubercles in the throat, followed by very well-marked symptoms of constitutional syphilis. The infection occurred at *the commencement of the seventh month*. She mistook the nature of her disease, and did not undergo any treatment. Her child,

[1] Op. cit., p. 142. [2] Same work, p. 157. [3] Same work, p. 159.
[4] Bouchut, Traité prat. des Mal. vénér. des nouv.-nés, 1852, p.878.
[5] Précis théor. et prat. des Mal. vénér., t. i., p. 169.
[6] Bouchut, op. cit., p. 159. [7] Bertin, p. 155.

born at the full time, died at the end of five months, in spite of active treatment, from pemphigus and mucous tubercles on various parts of the body.

From an analysis of these eleven cases, thus summarily described, it appears that syphilis contracted by the mother, whether before the fourth week or after the completion of the seventh month of pregnancy, has never produced the disease in the fœtus. This latter term of seven months had already been fixed *à priori* by Abernethy. Perhaps further observations will serve to shake this inference, and to extend the limits which I have felt justified in fixing. But it is probable that the difference, if established at all, will not be of a kind to nullify the immunity of which I believe the fœtus to be assured at the two extremes of intra-uterine life.

[With regard to the question as to the period of pregnancy after which syphilis contracted by the mother can be transmitted to the child, much has been learnt since M. Diday's book was published. Cases have been reported in which the infection has occurred simultaneously with impregnation where the child has been born diseased. Nor would anything be less likely than to have such a thing occur, inasmuch as the disease is in its most contagious condition, and in which infection of the offspring would most surely occur. As to the other side of the question up to what month of pregnancy could syphilis be contracted without endangering the child's health, a more extended knowledge enables us to prolong the limit beyond that assigned by M. Ricord, to wit, six months. Cases have been reported where eight months have elapsed before the disease was contracted, and yet the child was diseased.

A case is narrated by Dr. Vajda, of Vienna, Austria, and is exceedingly interesting.

Case.—A little journey made upon the 20th to the 24th of June, 1873, afforded a young married man the opportunity to try his luck outside of his marital relations, returning two or three days afterward to his home. His wife was then in the third month of her pregnancy and had always enjoyed good health. On August 10th, V. examined her and found her free from chancre or indolent buboes. The husband had a chancre. On September 9th, he indulged in coitus with his wife, he then having an unhealed chancre. She was in the seventh month of her pregnancy. On October 17th, she developed a hard chancre and an inguinal adenitis. Seven to eight weeks after the infecting coitus the man showed general symptoms of syphilis, *i.e.*., on March 26th; afterward he had papules and a buccal psoriasis. The wife had buccal mucous patches which relapsed repeatedly. At full term she was delivered of a child which, seven weeks after birth, showed papules and subsequently developed ozena, psoriasis, and pustules. Upon the development of syphilis in the child the possibility of extra-uterine infection was thought of, but on review of the history such a theory was rejected.

Here we find a case where the infecting coitus took place in the seventh month of pregnancy, on September 9th. Thirty-eight days afterward, on

October 9th, she showed an initial lesion and inguinal adenitis, that is to say in the eighth month of her pregnancy, and the child which was carried to full term, although born healthy, showed signs of disease after birth.—F. R. S.]

These inquiries have not been undertaken from mere curiosity, or for the attainment of abstract scientific precision. In the first place, it is well known that anti-syphilitic remedies are ill borne in the semi-pathological condition which often exists during the last months of pregnancy. If a woman contract syphilis at this period,[1] it would be very useful to know that the health of the fœtus does not call for specific treatment, which it would only be necessary to carry out with a certain degree of vigor before delivery when the symptoms in the mother are extremely severe. It must not be forgotten, however, that primary sores will always render active treatment necessary, for fear of infection during the passage of the child, if they existed at the time of delivery.

Again, under similar circumstances, a child born apparently healthy, of a woman who had contracted syphilis in the eighth or ninth month only, might be intrusted to a nurse without fear of communicating the disease to her, a guarantee which we are far from having when the child has been born of a mother infected during the first months of pregnancy.

But new and more varied observations are required for the definite solution of these questions, which it was my duty to put, but which are too important to be answered by the aid of mere assumptions or of an insufficient number of facts.

III.—*Combined Influence of both Parents.*

If, at the moment of fecundation, both the father and the mother are affected with constitutional syphilis, the infection of the fœtus is, it is said, obligatory and certain. All the writers on syphilis are agreed on this point; and the most recent among them, Maisonneuve and Montanier,[2] have only summed up the opinions already published when they affirm that in such a case "the fœtus has no chance of escaping infection."

For my own part I believe that this conclusion has been made somewhat too hastily, and that so serious a sentence demanded, at least, more conclusive evidence. We should first take into consideration the syphilitic conditions in which each of the two parents is placed; for they are, at the moment of fecundation, under the influence of a diathesis weakened by time and by the action of numerous remedies, etc.; whence we may certainly

[1] This occurrence cannot be so rare as might, at first sight, be supposed; for Parent-Duchâtelet only confirmed a known fact, when he remarked that women arrived at an advanced stage of pregnancy are the most sought after by certain men, and precisely by those most likely to infect them.

[2] Traité prat. des Mal. vénér., 1853, p. 369.

draw conclusions reassuring for the product of conception. At the worst, the infection of both parents can only expose it to two noxious influences instead of one. But if the disease be slight in each of the parents, may it not be the case that this double chance is less serious than the single one, with which one only of the parents, being severely affected, would have threatened its future health? To me the answer does not appear doubtful; and though it would then be almost certain that the child would be born syphilitic, I cannot think that it would be more than almost certain.

The proposition which I have just been examining leads me to the study of a more important subject. It has long been observed that, in a family where one only of the parents is syphilitic, not all the children are born with the disease. It happens sometimes, as has been observed by Sallion,[1] that between two deliveries which have been followed by such an unhappy result, one has occurred the product of which was born and remained exempt from any traces of venereal affection. It is then certain that when one of the parents is the subject of syphilis the child may yet be born healthy. Upon what does this phenomenon depend? Is it that, at the moment of conception, the diathesis slumbered in the individual in question? or is it rather that the influence of the healthy individual corrected the morbid influence inherent in the other?

Ricord[2] has been said to have affirmed that when only one of the parents has syphilis the healthy one transmits his or her immunity to the child. It is very evident that the idea of this celebrated writer on syphilis has been exaggerated; for, under the working of such a law, both parents being but rarely affected with the disease, the number of new-born infants presenting symptoms of syphilis ought to be much smaller than it is. But in regarding this pretended law as a simple possibility, we confine ourselves to the expression of facts, and publish a truth which physiology admits of, and experience confirms. It will always be possible, indeed, to assert that if a child be born with a state of health differing from that of those which have preceded or followed it, it is that the parents themselves have not, at the time of these successive fecundations, remained in the same condition of health. But certain examples render so evident the influence exercised in this respect by the preponderating action either of the male or of the female, that we cannot do otherwise than attribute to it the chief part in the production of the phenomenon.

Thus C. F. Haase[3] has seen a young girl, married at seventeen, who was first delivered of a female child, born weakly, which lived, but continued scrofulous. In a second pregnancy a female child died at the commencement of the ninth month; in the third, the same result; finally, in

[1] Compte rendu du Congrès de Nantes, p. 116.

[2] Prieur, Thèse, 1851, p. 28.

[3] Commentatio, Dresden, 1828, p. 14.

her fourth pregnancy, she went to her full time, and gave birth to a male child, which offered a striking resemblance to its father. This child was ill-developed, had an old look, and the skin peeled off the palms of the hands and soles of the feet. It cried incessantly. It had large ulcers on the buttocks, nostrils, and mouth, and died on the twentieth day, after having infected the nurse and another attendant. The father confessed that, a short time before his marriage, he had contracted syphilis while in Germany.

The fact that the fourth child was affected more or less than the preceding ones, is not what ought to preoccupy us here. The circumstance to which I particularly wish to call attention is that, on the one hand, it was affected differently; and, on the other hand, that its sex and resemblance betray the cause of this difference in the more direct participation of the father in the formation of its constitution. Beaumès relates a case absolutely similar to this, which I give in detail. (See Part II.)

As it might be alleged, however, that the diathesis of the parents is modified between two pregnancies, and that this has been the sole cause of the absence or presence of syphilis in the different children, other proofs must be furnished.

The following are, I think, irrefutable:

A woman contracted syphilis from suckling an infected child. She was afterward delivered of twins, of which one was syphilitic, the other still-born. She had previously borne a healthy child.[1]

Here two children resulting from the same pregnancy are infected in different degrees, or at least in a different manner. But it was the mother alone who was diseased, as she had not been infected by her husband. The correcting or neutralizing influence of the father, in regard to the poison, did not act in the same manner, therefore, upon each of them.

The same applies to the following case:

In 1823, a pupil of Campbell's[2] delivered a woman of twins, at the full time. The first was still-born, and quite decomposed; the second vigorous and healthy. For some weeks the cause of this difference continued unexplained, but the surviving child then presented unequivocal signs of syphilis, and the mother soon after had secondary symptoms.

The fact of twin pregnancy and of the simultaneous formation of two children, excludes, in this case, any explanation founded on a modification occurring in the constitution of the parents. For this modification, of whatever kind it might be, would require time. To explain the difference between the children, therefore, we must have recourse to the different influence, upon the one and upon the other, of the paternal and maternal type.

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[1] Mr. Price (Margate), Abstract of the Med. Sciences, p. 280.

[2] London and Edinb. Monthly Journal, 1844, p. 515.

This theory is further strongly confirmed by the instances in which the same woman successively produces healthy or syphilitic children, according to the father she gives them.

A woman [1] infected by her husband had several pregnancies, which all terminated, about the seventh or eighth month, in the expulsion of still-born children bearing evident marks of syphilis. One born later, alive, died during the first year, syphilitic in the highest degree. Still later, she had a healthy female child by another man, although she herself was not cured of her syphilis, and had had, during pregnancy, an enlargement of the tibia accompanied by pains which almost prevented her from walking.

Another woman,[2] having had connection with a man affected with syphilis, had afterward shown evident symptoms of this disease. She married another man, and had several healthy children by him. Having again met with her former paramour she became pregnant, and the child was born, this time, covered with a varioloid syphilitic eruption under which it sank.

These two last-mentioned facts are proofs of the law which exempts from syphilis children one only of whose parents is suffering from that disease, and dooms them, on the contrary, to undergo it when both parents are affected with it. But they indisputably establish, above all, this fact: that an individual affected with constitutional syphilis may beget a healthy child, provided that his influence has been corrected, in the act of fecundation, by that of a partner free from this diathesis.

[The two last-mentioned facts show nothing of the kind. The first case merely proves that in the woman as in the man syphilis has a tendency to limitation beyond which the disease is not conveyed, having exhausted itself. The second illustrates the fact that a woman may, during her period of repose from symptoms, during the time that the disease is latent, have children which show no signs of the disease. Besides, the history of the child is not satisfactory. Pray what is a varioloid syphilitic eruption?—F. R. S.]

The information conveyed by these examples still remains entirely to be utilized for the improvement of social sanitary science. What temperaments, what constitutions, and what races are best adapted to correct the syphilitic diathesis in this respect? By what selections may marriages be effected in which the vitiated humors of the father may be neutralized by the physiological preponderance of the mother, and *vice versa?* Is there any relation, among the children to be born of such unions, between the sex of those who shall be exempt and that of the particular parent who is so?

Great questions, which we have already weighed, and which we do not despair of being enabled to resume some day, if more numerous facts should lead us to any positive solutions.

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[1] Simon, Journ. des Connaiss. Médic.-Chirur., 1835, p. 257. [2] Ibid.

Section B.

ACQUIRED SYPHILIS.

There is no channel, no part of the body, and no manner in which a new-born infant may not, after leaving the womb, contract syphilis. The delicacy of its cutaneous system, its absolute inability to resist culpable manœuvres, and the action of special circumstances, such as parturition and lactation, would expose it to infection even more than the adult, if the absence of coitus at this age—at least voluntary and active—did not always incline the fatal balance on the side of the latter. We have, then, first to study the special syphilogenetic conditions which attend upon the infant at its birth, then those to which it is subjected in common with persons at a more advanced age. Hence arises a natural division of the subject into three chapters; viz., I. Infection during labor; II. Infection by lactation; III. Infection from accidental causes.

1. *Infection during Labor.*

This mode of infection has been observed by writers on syphilis from very opposite points of view. While Girtanner admits it as the sole agent of contamination in new-born infants, and Nisbett thinks it probable enough that syphilis, at that age, is due to no other cause, Bosquillon, on the contrary, refuses to believe in it. The generality of writers on syphilis have adopted a mean between these two opinions, and the facts at their disposal justify them by demonstrating the reality, but at the same time infrequency—greater even than it is generally described to be—of this mode of communication.

To convince ourselves that this is not the only mode of communication we need only take into consideration two facts. The first is, that the number of women who have inoculable matter[1] in the vulva at the time of delivery is much smaller than that of the new-born infants affected with syphilis. The second is, that children sametimes present, at birth, well-marked symptoms of constitutional syphilis. But how could these exist if they could have been contracted only during the act of parturition?

Far from this, it would, I think, be more difficult to furnish conclusive examples of the reality of infection during labor. Bertin, who advocates it strongly, gives only the following reasons for his belief:

"When a child, born of a healthy father and of a mother infected only a few days before delivery, presents symptoms of syphilis some days after

[1] No allusion is here meant to the blenorrhagic affections which so frequently exist at the time of delivery, and are transmitted, sometimes to the genital organs, more frequently to the conjunctiva of the child.

birth, while the mother is attacked by gonorrhœa and chancres, is there not a strong presumption that the infection of the new-born child occurred during labor?

"Is this presumption not changed into certainty when these symptoms are such as are termed primary?

"How, in fact, however rapidly the process of parturition may be completed, could the face and body of the child come into contact, with impunity, with the chancres and ulcers which infect the organs of generation of the mother?" [1]

Here are reasons enough, but not a single fact. I have sought for facts everywhere, but have not found any which are perfectly authentic. Whenever I have met with a notice of the appearance of a chancre in a new-born infant, I have been able, from the long interval after delivery, the testified healthy condition of the genital organs of the mother, or the discovery of an accidental contact with another individual having the disease, to convince myself that it was not contracted during the passage of the child through the external organs. Thus, without at all denying the possibility of the thing, but being rather convinced of its probability, I cannot give it so prominent a position among the causes of syphilitic poisoning in new-born infants; agreeing rather with Ricord, who says, "It is, without doubt, rare, but not impossible." [2]

If we reflect upon the multifarious conditions which must concur for the production of such a contagion, we shall cease to be surprised that instances of it are so rare. On the part of the mother it would require a chancre in the process of development, contracted from eight to thirty days, or thereabouts, before delivery; against which the body of the child must rub violently enough to absorb its secretion, but not so violently as to produce a hemorrhage from the surface of the ulcer which would dilute its secretion and render it innocuous. On the part of the child, it would require either an abrasion of the skin, or repeated friction, with long-continued delay of the part to be contaminated in the external organs, with the absence of the *liquor amnii*, and with the removal of the caseous matter, which has justly been regarded by Bosquillon and Jahn as the strongest preservative against the effects of the poison.

But, far from this being the case, who does not know with what rapidity and amidst what abundant lubrication the child is usually expelled from the womb? Are these the ordinary conditions of an infecting coitus? Are not all the prophylactic measures successfully employed by libertines —inunction of the member endangered with some fatty substance, prompt perpetration of the act itself, and careful ablution after its completion— faithfully repeated, on the contrary, by nature or by the commonest hygienic precautions?

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[1] Bertin, op. cit., p. 21.

[2] Lettres sur la Syphilis, p. 104.

It sometimes happens that in the same woman the ordinary contagion is possible, but does not occur; that the same vagina, in which there is a chancre, communicates it to a finger introduced for the purpose of exploration, while it is traversed with impunity by the child born shortly after. I find the first notice of this fact in "Antonius Gallus" who "testatur se obstetricem novisse quæ, dum mulieris inquinatæ partum exciperet, hoc morbo correpta fuit, nullâ tamen fœtui noxâ communicatâ." This example is as old as it is authentic, dating from 1540.

The following perfectly similar one occurred under my own observation:

Madame Le B——, a clever and experienced midwife, of Lyons, delivered a woman recently infected. A few days afterward she observed a chancre develop itself on the radial side of the index finger, near the nail, in the situation of a slight excoriation which she had had for some days. In spite of the efforts of several surgeons, or perhaps because there were *several*, the ulcer spread and put on a phagedenic character. After four months of ineffectual treatment, during which no constitutional symptoms supervened, she recovered under the influence of country air and frequently repeated dressing with fresh cream.

The child was born healthy and continued to be so.

[This illustration is not a happy one, as the disease which was conveyed to the unlucky midwife was not an initial lesion of syphilis but a chancroid, a simple venereal ulcer, having nothing syphilitic about it. This is proved by the rapid appearance of the sore after the delivery, the absence of constitutional symptoms, for no treatment was instituted to prevent or retard their coming, and the final recovery under proper hygienic regimen. Indeed, it may not have been any more than an indolent ulcer occurring in a debilitated or broken-down person, which was rendered phagedenic by improper interference and injudicious meddling. At any rate, be it what it may, the question of syphilis can be excluded.

For the same reason the child would not show any signs of syphilis; as the mother did not have the disease, and there is no reason to suspect the father of having been infected, the child could by no reasonable chance be the inheritor of hereditary syphilis.—F. R. S.]

In cases of this kind it might be objected that if the fœtus has not contracted anything it is because, being born of an infected mother, it was itself already infected before birth; and, consequently, could not contract a second time the disease with which it was already affected. But even if the child were infected before birth this would not prevent its contracting a primary sore during labor if the material conditions were favorable; for we constantly see individuals syphilitic in the highest degree contract primary sores if they expose themselves to the danger of connection with a female capable of communicating the disease.

[If by "primary sores" M. Diday means simple venereal sores, he is

right. These may occur repeatedly upon a person while suffering from an attack of syphilis; but if he means the initial lesion of syphilis, he is at fault. A person while under the influence of syphilis is not obnoxious to another attack of syphilis, and it is reasonable to suppose the same is true as regards the hereditary variety of the disease.—F. R. S.]

II. *Infection by Lactation.*

In this case the transmission is effected, or has been believed to be effected, in two distinct ways: either by a morbid lesion of which the nurse is the subject, or by the milk which the child receives from her.

A. *By a morbid lesion in the nurse.*—Many children born healthy of healthy parents return from the nurse with symptoms of constitutional syphilis. When have they contracted it? Very certainly during lactation. From whom? From the woman who suckled them. Where did it begin in them? Most frequently about the mouth. What were the first symptoms? Generally superficial, ulcerating, mucous papulæ.

All writers agree as to the observation of these facts, but as soon as we cease to speak in general terms the problem becomes involved in many doubts. Some assert, with Ricord, that the nurse was the subject of a primary sore, and communicated one to the child. Others, adhering to the older opinions, believe that the disease is communicated in a secondary form. Each of these explanations, however, if proposed as a general and exclusive theory, has its difficulties, and I might say almost its impossibilities.

If we admit the primary sore as the sole cause of infection, we may, strictly speaking, by throwing doubts upon the morality of the nurse, her husband, and those about her—by supposing her to be diseased without knowing it, or to be the agent of a mediate contagion—by accusing the state of health of those who approach the child, its real or legal parents, or its foster-brothers or sisters—by arguing from the time which elapsed before we had an opportunity of examining all the persons suspected, we may, I say, render the question difficult or insoluble. You may thus succeed, in more than one particular case, in making it impossible to prove that the origin of the disease was not a primary sore. But will this triumph of obscurity, with which you rest content, be capable of dictating its laws to the practical man who is daily witnessing the evident affiliation of symptoms, and can judge better than any one else of the morality of his patients? I doubt it; and these are my reasons for the reserved position I feel bound to take up in the face of this seductive theory.

The indurated primary chancre, the certain and, according to Ricord, sole cause of constitutional infections, with all its indolent ganglionic accompaniments, is rare, extremely rare, in new-born children. Yet how

large is the number of children who present well-marked symptoms of constitutional syphilis during lactation!

The class of women from which wet-nurses are recruited, offers but few examples of syphilis. I could quote certain villages and cantons in which venereal disease is unknown. A nursling arrives, and the plague at once breaks out. Perfect health of the population until then; from that moment syphilis attacking almost epidemically the nurse and her family, the husband, children of three or four years old, old women of sixty, and extending to two generations in each direction.[1] What incredible immorality, what unbridled sensuality must we not assume to exist in these families, if each of the victims must necessarily have contracted a primary chancre? And why have these habits of debauchery and their fearful consequences awaited, for their development, the arrival of the nursling? By what chance are they never seen in neighboring families, in which no strange child is being suckled?

This will suffice, I think, to enable any man who brings sound reason to bear upon this question, properly to appreciate the doctrine of *a primary sore in all cases*. Of the opposite theory, that which seeks to explain the transmission only by the communicability of ordinary constitutional symptoms, I shall only remark that, in spite of the most careful observations, it has not been possible hitherto to prove clearly the inoculability, and consequently the true contagious character of lesions of this kind, in the adult. The demonstration of this fact experimentally has still to be furnished.

It is, therefore, neither in the one nor in the other of these two explanations that we must look for the truth; it is between them. One striking fact will bring us into the right track. In the immense number of cases in which the disease has been communicated by the nurse to the child, it has very rarely happened that the constitutional sore on the nipple of the former has been the result of syphilis contracted in the usual way, after the development of a primary chancre in her own person. It has almost always been the consequence of the contact of her breast with the mouth *of another child infected with hereditary syphilis*. The ulcer she has had there, and transmitted, was not, therefore, a secondary affection of the usual kind. By its origin it partook of the essential nature of congenital syphilis. Can we then be surprised if, with this peculiar mode of development, it should present other characters and properties than the phenomena of an ordinary syphilis of the same standing?

But the chief characteristic of congenital syphilis is, to give rise to symptomatic manifestations contagious in effect, though secondary in form.[2] It then becomes intelligible that a child suckled at a breast ul-

[1] Numerous cases of this kind will be quoted in Part III.

[2] A special chapter has been devoted to the demonstration of this theorem (see Part III.), and the reader is requested to suspend his judgment on this passage until after the perusal of it.

cerated previously by an infected nursling, encounters in this ulcer an adequate cause of infection, since this symptom was, properly speaking, nothing *else than congenital syphilis accidentally engrafted upon an adult.*

Certain observations give this interpretation a high degree of probability. We sometimes see the intermediate link suppressed, and the disease transmitted from one nursling to a later one, by means of the nipple which has remained exempt in the nurse, though serving as an agent of mediate contagion. Thus:

Bertin[1] took into the department for nurses the woman Cla—, six months pregnant, and one of her children, aged twenty-two months. The latter presented large, prominent pustles about the anus and on the buttocks.

This woman was married, and had had four very healthy children; neither she nor her husband had ever had any symptoms of venereal disease. The child which she brought into the hospital with her was three months old, healthy, and was being suckled by her, when she took another child to nurse, born of a woman infected with syphilis, and itself affected with ophthalmia and chancres about the mouth. Eight days afterward her own child was attacked by chancres on the tongue and palate, and abscesses on each side of the neck. She then went into a hospital, and, although presenting no symptom of venereal disease, was, along with her child, subjected to anti-syphilitic treatment. This woman continued free from any syphilitic symptoms, but the child had, at the end of three months, an eruption of venereal pustules, the same for which it was treated, as was mentioned at the beginning of this notice, in the department for nurses.[2]

We here see one child infect another directly, as it were, and we can conceive that when the nurse, instead of being, as in this case, a passive instrument, herself undergoes the venereal poisoning, this passage of the *congenital virus* through her organism does not deprive it of the eminently contagious property which is its fatal appanage.

Whatever judgment may be formed concerning what is here brought forward as a mere hypothesis, it will not remain less certain on that account that the contact of the mouth of a nursling with the breast of a syphilitic nurse ought most certainly to be avoided, whatever may be the phase, the appearance, or the date of the syphilitic lesions existing thereon. For although the child may sometimes escape contagion; although we are not justified in saying with de Blegny[3] that "nurses cannot suckle children without communicating syphilis to them, when themselves affected with it;" and although the experience of Ricord,[4] Cullerier, and Nonat suffi-

[1] Op. cit., p. 149.

[2] Several points of this case make it probable that the affection in both children was primary; but that would by no means shake the reality of the mediate transmission of which it offers an example.

[3] Op. cit., p. 194.

[4] Lettres sur la Syphilis, 1851, p. 101.

ciently prove how exaggerated such an assertion is, it is always better, in such matters, to be too much rather than too little on our guard; and I doubt very much whether any of the worthy experimenters whom I have just quoted would allow a child of their own to draw the breast of a woman, healthy herself, but who had, the moment before, given the breast to a child with symptoms of syphilis about the mouth, however indisputably secondary these might be.

The opportunities of contact with infectious pus are too numerous and active during the act of suction for it to be necessary that I should spend much time in pointing them out and showing their influence—moisture, warmth, vascular congestion, nervous erethism, delicate membranes easily torn, frequent excoriations, pressure, prolonged rubbing and dragging at every moment—in no part of the body, in no function, and for no organ do the mechanical and vital conditions favorable to contagion appear to me to exert an action so powerful. And if, with such frequent instances of infection in nurslings as daily experience affords us, anything ought to surprise me, it is, in truth, that they are not much more frequent.

B. *By the milk.*—In attributing to nurses the disease contracted by their nurslings it is not always meant that the material cause of it is to be found at the time on their breasts. For the nurse, as for the mother, it has been admitted that they may, without presenting evident symptoms, become a cause of infection; the latter through the ovum, or the blood which she furnishes to the child; the former through the milk with which she nourishes it. It is in this way only, as we have already seen, that ancient authors understood the development of infantile syphilis; the same mode, although no longer as the exclusive one, has been advocated by many distinguished writers on syphilis during the last half century, as Bertin, Mahone, Bell, Astruc, Doublet, etc., and more recently Lane and Parker.

Swédiaur, however, and afterward Nisbett, had already denied this mode of communication. But it was Hunter especially who strongly opposed its admission into the list of infecting causes; and the arguments since used for this end are but a reproduction of those urged by him.

According to Hunter, neither the blood, nor any of the secretions formed from it—the perspiration, the saliva, the urine, or the semen—can become vehicles of contagion. The milk being also a secretion must partake of this negative property. We shall at once be able to estimate the true value of this proof if we bear in mind that the logical consequences of such an opinion lead Hunter to contest the existence of hereditary syphilis. And indeed, "he is much inclined to doubt that a fœtus contained in the womb of a syphilitic mother can receive the infection." And as for the supposition that the semen can, in the act of fecundation, pro-

duce a syphilitic fœtus, "it is in his opinion, a hypothesis without foundation."

When we consider that the only reason why such a man as Hunter treated as chimerical the commonest practical realities, was the impossibility of producing chancres by inoculation with the blood of a person affected with constitutional syphilis, we are seized with giddiness, as it were, and involuntarily ask ourselves—if reasoning can lead such a mind so far astray—what remains to us of certainty among all the demonstrated truths which we believe to be placed on the firmest basis?

I am wrong, however: Hunter has other evidence in support of his view. A little boy and a young woman swallowed milk containing, in the one case, a small quantity of pus from a primary chancre, in the other of gonorrhœal discharge. Neither of them suffered the least inconvenience. Therefore, he says, the milk of the nurse, which contains the same principles, and is elaborated in the same manner by the digestive organs of the nursling, ought to be equally harmless to it.

Here again Hunter has confounded the liquid vehicle *of the poison which produces a primary chancre* with the liquid vehicle *of the poison generalized in the economy.* That the former should not have produced a chancre when mixed with an immense proportion of fluid, and simply passing over a healthy mucous membrane, is by no means surprising: for these are the conditions most antagonistic to its action. But to conclude from the circumstance that a poison whose infecting power is entirely local has had no local effect, that another poison, whose general influence on the economy is demonstrated by the cases of syphilis transmitted from the mother to the fœtus, will have no effect when the organism receives it during several months as the sole element of nutrition is, with all respect for Hunter and his disciples, to forget in a singular manner, or to infringe the laws of analogy and the rules of logic.

Putting aside these vain speculations, the whole question is comprised in this. The blood transmits syphilis from the mother to the fœtus. The semen, a product of secretion, transmits syphilis from the father to the fœtus. This privilege, of which no other secreted matter partakes, is easily and rationally explained by the nature of the part which these two liquids play, the one in the formation, the other in the nutrition of the new being. Does the milk, a secretion whose importance absorbs, during its continuance, all the other functions of the woman—does the milk, exclusive element of the very active nutrition of the new-born infant during the first months,—does the milk which its almost inactive digestive organs elaborate to so small a degree that any other aliment requiring more action of them is not absorbed, and compromises life instead of sustaining it,—does the milk which according to the quaint expression of our Ambrose Paré, *is nothing else than blanched blood,* possess the same infecting properties? May it not, at least, possess them to a certain extent? I confess

that this problem is, in my opinion, far from being solved, and that if probabilities could alone influence me it would not be in favor of Hunter's view.

The question, unfortunately, does not appear to be easily susceptible of solution experimentally. If the milk be infected, she who secretes it cannot fail to be so too; and we are then always in a position to suspect that it is not by the milk but by the contact of a lesion on the breast with the mouth of the child that the communication of the disease to the latter has been effected. If we do not find any evident symptoms on the breast at the time of our examination, it will be difficult to prove that none had previously existed. And even if it were possible to prove their absence during the whole period of lactation, we might invoke against the advocates of communication by the milk the possibility of a mediate contagion, from an infected child to a healthy one, by the medium of a nurse, remaining herself exempt; a fact which Bertin's case, quoted above, places beyond all doubt. I shall not stop here to discuss certain observations of Whitehead, Starck, Cooke, and Bertin, intended by them to support this theory, but which do not, and could not do more than establish presumptions in favor of it. Analogy offers us no better resources. Thus Fossati [1] asserts very positively that he has furnished legal proof that the bite of a sucking puppy, born of and suckled by a bitch in whom hydrophobia did not appear until after pupping, communicated the disease to an unfortunate man, who died of hydrophobia in 1844, in the *clinique* of the University of Pavia. But in spite of his affirmation, can we be sure that the mother had not rather communicated the disease to her pup by biting or licking it than by suckling it?

The partisans of Hunter are evidently in a better position when they appeal to experience, for they are satisfied with collating negative facts. But we know very well that, in relation to virulent affections, it is possible —contagion by accidental transmission never being obligatory—to multiply, almost at will, the cases of non-contagion. And yet they do not appear, hitherto at least, to have drawn from their favorable position the advantage which it afforded them; for there is not one of their observations to which besides its insufficiency as a proof (the fatal attribute common to all negative facts), we cannot impute some omission, which strikes us the more because it, at least, might have been avoided. Thus the last in date, A. Dugès, has written his inaugural thesis [2] under the title: "On the Harmlessness of the Milk of Nurses affected with Syphilis for the Children which they suckle." Yet the only personal observation which he brings forward to justify a dictum so absolute is:

A woman named C. E—— was delivered, on July 6, 1851, of a healthy female child. She herself had nothing but some vegetations.

[1] Mémoire sur la Rage.

[2] Thèses de Paris, February 28, 1852, p. 14.

A woman named M. M——, who presented a well-marked tubercular eruption, entered the same hospital (de l'Ourcine) in the first week of August following. Having been at once placed under treatment with the protoiodide of mercury, she suckled the child of the woman C. E——, the latter not having any milk. The child remained under observation for five months, and with the exception of great weakness, did not present any traces of disease. The milk of its nurse rapidly restored its health, which had been much compromised by the milk of its mother. It died of convulsions when five months old.

According to Dugès, this observation "proves clearly the harmlessness of the milk of syphilitic nurses." In my opinion it proves something more, which the writer does not appear to have suspected: the power of protoiodide of mercury to cure constitutional syphilis! As the child only began to take the milk of this nurse from the time when she was subjected to specific treatment, this milk could not long remain fitted to communicate the contagion; but, on the other hand, it conveyed the remedy during a period of five months.

Cullerier,[1] on his part, has sought to support, by the results of his experience, the doctrine which denies the transmissibility of syphilis to the child, either by the milk which it sucks or by the lesion of the breast of the nurse coming in contact with its mouth.

In 1850 he read, at the Academy of Medicine, five cases of infected nurses, whose nurslings had continued healthy. The constitutional symptoms in the nurses were well marked. In the first they consisted in cephalalgia, alopecia, roseola, and ulceration of the tonsils; in the second, in mucous patches in the vulva and throat; in the third, in roseola and patches on the genital organs and at the commissures of the mouth; in the fourth, in lichen on various parts of the body, and ulceration at the base of one nipple; in the fifth, in numerous pustules of ecthyma, situated chiefly on the breasts.

But all these observations appear to have been made on syphilitic nurses suckling each *her own child*. These children had, therefore, already been subjected, *in utero*, to causes of syphilitic poisoning much more powerful than the action of the milk. And if they had resisted these, how can we be surprised that they should resist a much less active influence? On the strength of this first experiment made upon them by nature, it may be affirmed that they were of the number of those individuals who are not affected by constitutional poisoning—of those, precisely who furnish the negative facts of which I have just spoken.

We see how much precision is required in the narration of these cases before the discussion of them can become really useful to science. What, then, is to be said of those to which Ricord[2] alludes only with the follow-

[1] Gaz. Méd. de Paris, 20e année, p. 892.

[2] Lettres sur la Syphilis, p. 101.

ing words: "Nurses who presented well-marked secondary symptoms have been able to suckle children sent to me as affected with syphilis, but who had nothing more than simple eruptions of eczema, impetigo, or the various forms of porrigo; and never, under my observation, have these children been infected." The details indispensable for conviction evidently did not form part of the sketch which this ingenious writer on syphilis had traced out for his work. Their omission also justifies reserve on our part, and we shall defer the examination of them until they are reported with all the necessary details.

Venot has, in his turn, undertaken this proof.[1] But, for two of his four observations, the harmlessness of lactation is explained very naturally, without involving, as a necessary consequence, the non-transmissibility of symptoms to the child in this way. In fact, it is specified, in the first, that the mother, who was at the same time the nurse, had sore throat with gray aphthæ, lenticular spots on the abdomen, thigh, and neck, a pemphigoid eruption on the genitals, and periostitis of the tibia. In the third the mother, also nursing the child, had advanced caries of the palate, with gummy tumors in the course of the extensor tendons of both knees. Is it then surprising that, as there was no syphilitic affection of the breasts, the child should have escaped contagion? Venot's second observation refers only to the transmission of a primary chancre. The fourth is still more foreign to the question actually in discussion, for it refers only to a syphilitic child which failed to infect the nurse, a subject which will be examined separately in the third part of this work.

A thought strikes me, however, and may be applied to observations of Cullerier as well as to those of Ricord or Nonat, to whom he simply alludes by name. It is that these shrewd practitioners did not, doubtless, confine themselves strictly to the experimental confirmation of the fact. I know them too well to suppose, for an instant, that, having before their eyes and visiting every morning a woman decidedly the subject of a secondary diathesis, they should have delayed a single day to administer specific remedies in the proper quantity. What becomes, then, with this course of action—otherwise eminently prudent and the only conscientious one—of the proof of the harmlessness of the poison, from the moment it is sought, while observing it, to neutralize it by administering its antidote?

I feel instinctively, better perhaps than I shall succeed in expressing it, that something more is wanting in all these results to raise them to the rank of proofs. Both the advocates and opponents of transmission by the milk, commit, as it appears to me, a common error in reference to this question: that of applying the same standard of facts essentially different. We are sufficiently cognizant of the possible effects of this impure food on the new-born child to be justified in affirming that it has produced no

[1] Journal de Médecine de Bordeaux, March, 1852, p. 148.

effect, solely because we do not see it followed by any of the phenomena of constitutional syphilis acquired by the usual mode of contagion? May not this entirely specific influence have its own peculiar characteristics, modality, and period of development? When, for instance, we see syphilis derived from the father not manifesting itself until at least nine months after birth, but then appearing in the most serious forms, why should not the milder and more gradual influence of lactation reveal itself by slighter and more tardy indications, by certain forms of scrofulous affection, by complications of intercurrent diseases, rather than by distinct and unequivocal symptoms? Is it absolutely necessary that there should be present, in a morbid state, the train of *copper-colored* spots, periosteal pains, or *opaline* patches, before we can venture to affirm that syphilis may have had some part in its production? Lastly, may not the milk of an infected nurse be capable of rendering syphilis in the child she is suckling less curable by specific remedies? This is the opinion of Blundell.[1] He spoke, in his lectures, of a child born syphilitic of a syphilitic mother, who suckled it. Dr. Lowder removed the symptoms in this child on two successive occasions by mercurial treatment, but when they appeared for the third time he concluded that the disease was maintained by the milk of the mother. The child was therefore weaned, and was cured without difficulty.

I do not know whether these doubts will develop in the mind of some favorably placed observer the desire of filling up by clinical researches the gap to which I allude. But for the present they will suffice, at least, to justify me in saying that, before we can admit the harmlessness of the milk of a syphilitic nurse for her nursling, more is certainly required than to have seen the latter exempt from the ordinary symptoms of syphilis for five months, or during the time necessary for the nurse to go through a course of antisyphilitic treatment in a hospital, as was specified in the observations mentioned above.

For my own part I neither admit nor reject anything absolutely concerning the point at issue. If reason induces me to admit the reality of this influence, I must confess that experience has not yet lent sufficient support to its suggestions. I wait, therefore; merely appealing to impartiality in the first place, and afterward to the zeal of future investigators.

[This point, of the contagious properties of the milk, is an exceedingly hard one to settle, but the hypotheses advanced by our author are unsupported by anything which can be considered as convincing or worthy of the slightest consideration. Since the publication of this book, experiments have been instituted to discover whether syphilis can be transmitted by the milk, or more correctly speaking, whether the milk of a syphilitic woman is poisonous. The attempt was made by Voss and reported by him in the

[1] Annales des Mal. de la Peau, et de la Syphilis, 1844, t. i., p. 318.

St. Petersb. Med. Zeitschrift, but without success; and certainly no cases have been shown in which this condition of affairs could be proven to have occurred. The milk may serve as the vehicle in which the secretion of an initial lesion or of a mucous patch may be communicated, just as the saliva will act as a vehicle in analogous cases, but the weight of evidence and of experience is decidedly at variance with this theory and teaching of M. Diday.—F. R. S.]

III.—*Infection from Accidental Causes.*

I have already said that almost all the accidental causes which threaten the adult may affect children at the breast. But it must not be imagined that this form of syphilis is nearly as common in them as that which is hereditary. If, of late, we have seen observations of primary chancres transmitted to children become more common, it is because a theory interested in explaining by this mode of origin all the cases of venereal affection communicated during lactation has taken advantage of every opportunity of multiplying instances. Thanks are doubtless due to it for having cleared up this side of the question by the relation of cases to which older writers had paid too little attention. But, all authentic as they are, they none the less constitute a great minority in comparison with the cases of venereal disease transmitted to the new-born infant in a different manner.

The mechanism of the propagation itself being always the same, as the result of contact, it is only necessary here to seek to determine the circumstances under which it is most frequently effected. This study, which is the only interesting one, especially recommends itself by the clear light it is capable of throwing on the prophylaxis of affections of this nature. Thus new-born infants may be infected:

A. *By a primary sore in the nurse.*—This is no longer the same thing as transmission by means of lactation, since the nurse does not communicate the constitutional malady, but only a lesion which is its possible cause. Without being so frequent as it has been said to be, this cause is pretty often in operation, either without the knowledge of the person affected, or with her knowledge and in spite of the precautions which she takes. In the first case, if secondary phenomena afterward show themselves on her breasts, she believes that her nursling has really infected her; in the second, she too often endeavors to persuade others of it. Her situation, in this respect, is sometimes of a mixed character. Thus:

Ricord[1] states that a woman under the care of Cullerier at l'Ourcine, who had a primary chancre in the genital organs, pressed and pulled her nipple with her fingers, after having touched the sore in the vulva with

[1] Lettres sur la Syphilis, p. 103.

them. She thereby produced a chancre on the nipple, and the child she was suckling contracted one in the mouth.

Another nurse, mentioned by Ricord, had a chancre on the nipple, which had been given her by a person affected with a primary chancre on the lip, the latter thinking to do her service by emptying her breast by suction.

The nurse, in these cases, might be ignorant of the danger to which the child was exposed in suckling; for not having believed her breasts to have been exposed to contagion, she might easily continue to deceive herself concerning the nature of the lesions upon them, and to regard them as the chaps which so often result from suckling. If this mistake constitute an excuse for the woman, it does but enhance the danger to the child, on account of the conviction it inspires of the harmlessness of close and prolonged contact with the diseased organ.

Under other conditions, the nurse knows perfectly well what is the nature of her disease. Such was the case with one mentioned by Ricord, on the inner surface of each of whose breasts there was found an indurated chancre contracted *ab antero-superiore venere,* and which she had communicated to the child during lactation.

The excoriations of the nipple so common during lactation greatly facilitate the development of primary chancres at this spot. They sometimes receive the contagion from the mouth of one child to transmit it to that of another. But however this may be, it is difficult to understand how, when the apex of the mamma is the site of chancre, the lips which are applied to it and press it at every moment of the day can escape the influence of a poison so eminently inoculable, and which they, so to speak, squeeze out from it.

Contagion appears to me, under such circumstances, to be almost inevitable; and it is truly fortunate that it is not met with more frequently.

Some women, when they have recently been delivered, seek to render their position a source of profit; they wish to become wet-nurses. To encourage the secretion of milk they offer the breast to the first child they can meet with. It will easily be understood that this habit, sometimes compulsory, is a very common source of contagion; and the more so because parents who would examine, or cause to be examined, most carefully a nurse to whom they were about to intrust a child for a long period, take no precautions when they know that it will remain with her for a few hours only.

B. *By a stranger the subject of a primary chancre.*—Here again the communication occurs, sometimes inadvertently, sometimes with a full knowledge of the cause, in consequence of culpable manœuvres. The first case is frequently the accidental consequence of the habit of kissing children repeatedly and passionately, of letting them lie in the same bed, and of

washing them with the saliva, the possible vehicle of a contagious principle. Let us quote a case of each kind.

I treated, in concert with my worthy colleague, D'A——, a lady who had a primary chancre on the lower lip, communicated to her by her husband in I know not what manner. The mother of a child of four months old, which she idolized, she felt it as a great privation to defer, until the time when her sore should be healed, the kisses with which she had previously covered it at every moment. Did she one day lose patience? I do not know; but we saw an accidental scratch at the labial commissure of the poor child gradually assume such a character that the deep and prolonged application of nitrate of silver to this ulcer was thought necessary. This preventive treatment was successful.

Of the second mode of communication Trousseau gives us a good instance.

This worthy professor saw [1] a little girl of twelve months old who contracted a deep chancre on the buttock. He learnt that the mother took the child into the same bed, and, as the cold was extreme, pressed it closely to her to warm it. This woman had primary sores in the vulva.

As regards the washing with saliva, I could not choose a more striking illustration of it than the following, borrowed from Bertin.[2]

A little girl, four months old, healthy herself, as were also her father and mother, became the subject of a chancre on the upper and inner surface of the left labium. It cicatrized at the end of a month; but a bubo formed in the groin on the same side, which suppurated. Her legs and thighs soon became covered with pustules. It was discovered that an aunt of this child, affected with syphilis, tended and kissed it, sometimes gave it the breast to quiet it, and lastly that she washed its genital organs with water which she had previously put into her mouth to warm it.

Ricord [3] alludes to cases observed by himself in which Jewish children received the infection, and presented true chancres on the prepuce, which had been divided in circumcision and then sucked, to arrest hemorrhage, by an operator in whose mouth he ascertained the existence of primary lesions. Here the saliva had very certainly contained, and transmitted to the innocent subjects the germs of the malady.[4]

Some writers are of opinion that syphilis may be communicated to a

[1] Gaz. des Hôp., 1846, p. 571.

[2] Op. cit., p. 77.

[3] Lettres sur la Syphilis, p. 98.

[4] It is sometimes necessary to carry our investigations very far for the purpose of discovering the starting-point. Richet mentions a little girl affected with primary chancres about the anus, born of healthy parents and suckled by a healthy nurse, concerning the origin of which the medical attendants were much puzzled, until it was ascertained that a clerk of the house, himself infected, had been in the habit of holding this child on his bare hands, which were frequently soiled, and which he had not always taken the precaution to wash.

child without actual contact with a diseased part. Thus a person affected with syphilis would infect a child by carrying it in his arms, lying with it, or impregnating it with that *aura venerea* which they suppose to be exhaled from his whole person. Need I say that ill-observed facts alone have been able for a moment to gain credit for this hypothesis.

As regards the criminal attempts which so frequently furnish occupants for the benches of the courts of assize, we need not occupy ourselves with them at the present moment. It is enough to remark that as their real authors have a pressing interest in concealing themselves, it is frequently and unjustly upon the nurses or upon the father and mother that suspicion is thrown. It must also be remembered that the attempts, which are made chiefly upon female children, being usually accompanied by excoriations, the inoculation of the contagious matter finds in them a condition favorable to the development of its special action.

c. *By a person affected directly or indirectly with congenital syphilis.*— This refers to the foster-brothers or sisters, the husband of the nurse, and all his family. I have already stated, and hope to prove it in Part III., that the lesions of congenital syphilis differ from those of ordinary syphilis by an infinitely greater power of contagion. And what is at the same time remarkable and deleterious in them is, that they transmit this same property to the person who receives the disease through them. Thus, that of two children, one the subject of hereditary syphilis, the other healthy, the former should infect the latter by means of their daily intercourse, is not difficult to understand after what has been said of the higher degree of contagiosity peculiar to syphilitic lesions of this class. We have already quoted instances in which the first child has poisoned the nurse, who has then transmitted to the second the disease communicated to herself. But the course of things is frequently a different one. From the *tainted* suckling the malady passes to the nurse, then to her husband, then to the adult members of the family, to return lastly to the other strange children domiciled with them either at the breast or after weaning. The annals of science abound in observations of this kind, which will be mentioned in detail in the course of the present work. And we should be overwhelmed with surprise on seeing the rapidity with which lesions, *though secondary in appearance*, spread from one individual to another, if we had not the explanation afforded by this assumed anomaly in the *congenital nature* of the lesion which has been the primary source of this series of successive contaminations.

The fact appears to me so established that, converting the consequence into a premise, I would willingly employ it as a means, or at least as one of the elements of diagnosis. Thus, if I saw a woman presenting symptoms of constitutional syphilis transmit them to her husband, the suspicion would at once arise in my mind *that they were of a congenital*

character, that they resulted in her from relations with a new-born child affected with hereditary syphilis. And I should consider the husband, in his turn, as being more particularly capable of communicating by contact the lesions he had contracted in this manner, however secondary their appearance might be in him.

D. *By vaccination.*—The vaccine pustules developed upon a syphilitic child have often been and still are accused of transmitting venereal disease to another child vaccinated with the pus which they contain. Ricord has nullified these apprehensions by demonstrating, in each of the cases brought forward as examples of such an accident, that an error had arisen in one or other of the two following manners:

Either the child which has been vaccinated has not really had a genuine syphilitic affection, but one of those mild eruptions so common at an early age, and which so often spread over a great part of the body under the influence of the febrile condition induced by vaccination.

Or the child from which the lymph was taken presented, instead of a true vaccine pustule, a chancrous pustule, initial lesion of the primary syphilitic ulcer when it develops itself on the skin, and which presents, in fact, characters very capable of causing it to be confounded with the vaccine pustule.

PART II.—DESCRIPTION.

The first consideration, in commencing this study, is to determine the order to be followed in tracing out a sketch into which so many various objects are to be introduced. But this is at the same time most difficult and most important. Here, still more than in the case of syphilis in adults, all the bases upon which to found a classification are necessarily weak at one point or another.

To give an isolated picture of *each kind of lesion*, pustule, exanthem, caries, ulcer, etc., would teach us indeed to recognize the various forms of the disease, but would leave us in ignorance of the manner in which they are connected with and succeed each other.

We might know how to distinguish the symptoms and yet fail to recognize the disease itself.

To examine the phenomena in *a given region of the body, or in a given system of organs*, would involve repetitions, and, consequently, impair the clearness of our view. It is true that the topographical consideration of them deserves special mention; but confined as it is by the whole circumstances to a small number of points, it could not, without danger for our description, usurp the place of a general principle of division.

Will it be desirable, then, to follow the disease *in its chronological evolution*, from its commencement to its termination? We could scarcely do this in reference to ordinary syphilis, and we should not, *à fortiori*, succeed in the case of the new-born child, in whom the affection runs as many different courses as it has different origins; in whom its first aggression may be either *an insignificant and circumscribed blush*, or a group of corroding ulcers; and where it sometimes destroys the embryo in the first months of gestation, sometimes spares the child up to the moment of weaning.

Lastly, does the *greater frequency* of certain forms of the disease point out to us the order to be adopted in the description of them? It does not, for to follow this guide exclusively would be to advance almost at random, to sever the most natural connecting links, and to deprive ourselves of the aid which notions already acquired furnish for the acquisition of new ones.

The least imperfect order appears to me to consist in the *successive study of the different lesions;* and this is, therefore, the one which I have felt called upon to adopt, with two conditions:

I. To keep in view, in each article, the principal indications to the importance of which we have just alluded.

II. To trace out, after the description of the different lesions, a sketch of the progress of the disease in reference to its entirety.

CHAPTER I.

DETAILED AND DIAGNOSTIC INDICATION OF EACH LESION.

I.—*Primary Chancre.*

This lesion, said to be the necessary starting-point of syphilis in the adult, or at the least its most common source, does not even find a place in the nomenclature of syphilis in new-born children. When they contract the disease by generation, a chancre is never the first manifestation of it. When, on the contrary, they contract it accidentally, after birth, whether from the nurse or from strangers, a chancre is, indeed, sometimes the agent of transmission and the first symptom in them. But then, apart from the difference of its most common situation, it resembles so exactly a chancre in the adult, and the history of this latter is now so perfectly known, that it would be altogether superfluous to devote a special description to it.

[In cases of acquired syphilis in children as well as in adults the disease always begins with an initial lesion ; it is not "sometimes," but always the first symptom in them.—F. R. S.]

II.—*Buboes.*

Buboes are very rarely observed in children at the breast. This is a very important fact in an etiological point of view, and I shall dilate upon its consequences further on. I confine myself, for the present, to the establishment of it. In the numerous observations which I have collated, I find scarcely any mention of ganglionic engorgement, and not a single instance of a bubo terminating in suppuration. Bertin, who wrote rather a long chapter on this subject, was forced to compose it almost entirely of theoretical views concerning the classification of buboes in general. But when he comes at last to specialize these abstract data, he is compelled to write that "buboes, tumors, and engorgements of lymphatic glands are far from being as frequent in new-born children during lactation as in adults." Then, after having rejected, with the good sense which he is known to possess, the vain hypotheses of writers in explanation of this difference, he gives the one which appears most plausible to him. "It

has constantly been observed," he says, "that buboes follow primary ulcers much more frequently than secondary ones; but it is the latter which manifest themselves most frequently in the children we are called upon to treat, because the generality of them are affected with constitutional syphilis contracted *in utero*."

This explanation (in my opinion the only admissible one) has the more force when coming from Bertin, as he believed, with other writers on syphilis of his day, in the existence of *constitutional venereal buboes*, the indirect products and significant indications of a confirmed syphilitic diathesis, but which are now regarded as dependent upon scrofulous conditions. But if a specialist like Bertin, then, who arbitrarily arranged cases of this kind of engorgement under the head of venereal affections, still found the number of syphilitic buboes in new-born children so small, there was little probability that his opinion should be weakened by later experience; and I see, in fact, that even in our days it is he who furnishes precedents on this point.

Glandular enlargements are more common beneath the jaws and in the neck than anywhere else, because the lesions resulting from impure contact which produce them are generally developed in the mouth. Is, then, the history of congenital syphilis entirely wanting in examples of a suppurating bubo in the inguinal region? Certainly not, for Bertin himself quotes the case [1] of a little girl five months old. But the details of this case render it extremely probable that the bubo was not due to the influence of a constitutional affection, but that, on the contrary, it had followed the same etiological laws as those which accompany primary chancres in the adult. This child had, in fact, had a chancre for a month on the upper and inner surface of the labium on the same side as the bubo; and inquiries made in the family showed the source of infection to have been an aunt affected with syphilis, who was brought into near and frequent approximation to her unfortunate niece.

III.—*Exanthemata.*

Redness of the skin is often observed to be the forerunner of some other deeper change, some pustule, mucous tubercle, etc. But the only rash which I have seen in children, characterized solely and during its whole continuance by redness of the integuments, is roseola. It is distinguished by patches of a bright rose color, circumscribed, irregularly rounded, of various sizes (most frequently about as large as one of the nails), appearing by preference on the belly, lower part of the chest, neck, and inner surface of the extremities.

This eruption is generally one of the first manifestations of syphilis;

[1] Op. cit., p. 77.

but it is soon accompanied by other symptoms, and especially by ulcerations about the mouth and anus.

I have seen flea-bites, in spite of the central ecchymosis which distinguishes them, taken for patches of roseola. With respect to measles or scarlatina, the febrile excitement which precedes and accompanies them, and which is entirely wanting in the case of syphilis, is a sufficient distinction. Simple non-syphilitic roseola might more easily lead to a mistake. Cazenave [1] asserts that this eruption may be distinguished by its shorter duration, and by its maintaining the same color and the same degree until its termination. These are precise indices, but altogether insufficient for diagnosis, at least for a diagnosis available in practice. For it is not after having taken time to follow its progress, it is immediately and at once, that the nature of the disease must be decided on; because it is at once, in cases of syphilis, that it must be treated. But the coppery tint and the imperfect disappearance of the redness under the pressure of the finger, may enable an experienced practitioner to recognize syphilitic roseola; the best and least vague sign, however, and one which is within the reach of all, is, as I have said, the co-existence in the same subject of syphilitic symptoms differing from it.

Intertrigo and erythema appear in situations and forms, and from the influence of causes, which allow of their being easily distinguished from a venereal exanthem.

But can syphilis take on, in a child, the form of erysipelas? If I put this question, it is because I have already found it proposed by two writers of note. Bertin,[2] without asserting the venereal character of this symptom, remarks, "that there frequently shows itself on the bodies of children born of infected parents, a partial or general erysipelatous redness, which cannot be attributed to want of cleanliness, or to any external cause of irritation, and which resists all lotions, baths, and ablutions. This redness," he adds, "is observed to precede venereal symptoms about the mouth, and sometimes to outlast them for a considerable time."

Deutsch, of Nicolaï,[3] says "that the various syphilitic affections of new-born children may be accompanied by non-eruptive affections of the skin, of a distinctly erysipelatous redness and tension, chiefly about the loins, buttocks, and genital organs; this pseudo-erysipelas sometimes appears on the soles of the feet."

As for this latter situation, it is highly probable that Deutsch mistook for erysipelas, or traces of erysipelas, the skin which had been separated by dried-up bullæ. But, for the other parts of the description, this agreement between two writers, who are no doubt strangers to each other, cannot fail to be striking. All that it appears to me justifiable to conclude

[1] Traité des Syphilid., p. 554.

[2] Traité de la Mal. vénér. chez les n.-nés, p. 120.

[3] Journ. für Kinderkrankheiten, March and April, 1851.

therefrom is, that erysipelas appearing in a child the subject of venereal infection ought to be viewed with some suspicion, and that it might very well not indicate any other treatment than the continuation of the specific one.

IV.—*Mucous Patches.*

This symptom, as it is generally one of the earliest, is also incomparably the most frequent in new-born children, as well as that which attacks the most extensive surfaces and affects the most varied situations. The anatomical peculiarities proper to early age easily explain this. We know, in fact, that in the adult flat pustules occupy by preference either the mucous membranes, or, in the skin, those parts where it is *thin, moist, and exposed to constant friction.* But, of these three conditions, the first is the essential characteristic of the cutaneous system at birth. The second necessarily obtains, for the neighborhood of the mouth and nostrils, from contact with the milk, the saliva, the tears, and the nasal mucus, fluids which, at that age, may fairly be termed *uncontrollable;* for the anus and genital organs, from the constantly repeated excretions. In respect to the third, it will be remembered that the large quantity of fat produces folds in the skin, and consequently more frequent friction than at any other period of life.

But, to understand fully the great frequency of mucous patches in children, we must be able to recognize this form of affection, despite the varied appearances which a difference of period, of situation, of sanitary measures, and of treatment, etc., impart to it; we must bear in mind that, in new-born children, it rarely remains dry; that, especially when it affects the mucous membranes, it tends so rapidly to ulceration that the medical attendant often sees it only in this state; that want of attention and cleanliness may cause it to multiply to such an extent as to form, by the successive addition of superposed patches, true tumors; that sometimes, as Ricord has established, it develops itself as the sequel and on the site of a primary chancre; and that, in the mouth, the milk, or food taken too hot, give it a concrete white covering which frequently, to an inattentive observer, masks its true character.

The affection here alluded to presents itself, and must be studied, separately, as occurring on the skin or on the mucous membranes.

A. *On the skin.*—It appears in the form of patches or elevations, very slightly prominent, of the size of a centime, with a rounded or rather curved border. Their surface has the white color imparted to the skin by the prolonged application of a poultice, or that which a layer of collodion offers at the moment when it is beginning to dry. This tint is not uniformly distributed, however. We see it more strongly marked at the central points of the patches than toward their borders. Cracks and

superficial erosions appear upon the morbid surface when it has existed for some time; and a serous liquid of a peculiar odor escapes. Left to themselves these solutions of continuity may increase in extent, but they do not become deeper.

It is to be remarked that the more nearly the part affected approaches the texture of the mucous membranes, and the larger and more confluent the patches are, so much more strongly is the white color marked, so much more is the ulceration rapid and the discharge abundant.

These patches most frequently appear on the scrotum, the vulva, in the genito-crural fold, about the umbilicus, the axilla, the commissures of the lips (where Nicolas Massa has already pointed them out as a sign of syphilis), and the anus; less frequently at the alæ of the nose, between the chin and lower lip, behind the ears, in the external meatus of the ear, in the spaces which separate the toes, and on the hairy scalp. In this last situation, where it appears only in new-born children and in adults who are bald, the mucous patch remains dry longer than elsewhere; and it is there sometimes covered with true crust. Care must be taken not to confound it with ecthyma, the expression of a more advanced syphilitic diathesis.

Mucous patches on the skin co-exist most frequently with a roseolous and especially with a papular eruption. Mucous patches and papulæ even appear to be the common manifestation of an identical cause, *i.e.*, of a similar degree and similar period of constitutional infection. Thus, as the child gets older the papular form will predominate. Under the opposite conditions, mucous patches will predominate, and will be found in the situations generally seen to be occupied by the papulæ, as the belly, the buttocks, the nape of the neck, etc. There is nothing surprising in this, for there exists more than a mere analogy between the two lesions. If the cutaneous secretion which covers the papulæ meet with moisture which macerates it, the papula, in developing itself, takes on the form of a mucous patch; thus we see that it is a mere question of situation.

The diagnosis of mucous patches is easy for one who has been accustomed to see them, but the most detailed description could only give a very imperfect idea of them. Without neglecting to consult that which we have endeavored to trace from nature, the practitioner must bear in mind that experience and not reading, the suggestions of his good sense and not of his imagination, are indispensable for this diagnosis, which is an object of primary importance in the study of syphilis, and especially of infantile syphilis.

Slight cracks often affect the labial commissures; in suspected children these must be examined carefully, and if they continue in spite of emollient applications, if their surface assume a white color, and above all if they increase in extent, they are probably mucous patches. The same remark applies to intertrigo, except that powdered iris or lycopodium may be substituted with advantage for emollients in the treatment adopted as a test

of its nature. Behind the ears and on the hairy scalp *crusta lactea* may simulate the syphilitic change now in question. But these crusts are yellow, thick, confluent, and of irregular shape. When detached by means of poultices they disclose only a simple inflamed surface ; all characteristics very different from those of the mucous patch.

B. *On the mucous membranes.*—The venereal patches, as was remarked already, are here always much less prominent and ulcerate much more rapidly. On examining them at the outset, we observe a simple white elevation, the irregularly rounded shape of which gives it its chief syphilitic stamp. But points of excavation soon show themselves at the centre of this surface ; and after a short time only a single ulcer is to be observed.

Whether they affect the skin or mucous membranes, syphilitic mucous patches have, in new-born children, an unmistakable predilection for the head (especially the face and mouth) and the organs of generation. Lamauve, who has established the fact, explains it in reference to the head "because it is the part which nature forms first, and for the development of which the greatest efforts are required ;" in reference to the organs of generation, "because they have a special affinity for the morbific virus." Less easy in our day to be satisfied with mere words, we place the reasons of this frequency in the structure and in the functions of the parts. In the structure, because it is there that the orifices of the mucous cavities converge, orifices around which nature has accumulated vessels and nerves of different kinds, hair and sebaceous follicles, and a fine and irritable integument, and, consequently, the most active predisposing causes of disease. In the functions, because, independently of the sympathies which are called into play about the neighborhood of these orifices, and of the different kinds of sensibility with which they are provided, their participation in the acts of digestion, respiration, crying, prehension, suction, and mastication, the effect of cold and the excretions, constantly bring influences to bear upon them which determine the outbreak of a diathesis in those situations rather than in others.

Venereal patches on the genito-urinary mucous membranes in either sex present nothing very special here. In the new-born infant, in whom the function of these organs slumbers, in whom they scarcely ever serve as an inlet for syphilis, constitutional manifestations are infinitely less frequent than in the buccal cavity. Further, as no other analogous disease can complicate or simulate them, their topographical description offers little of interest. Let us not forget, however, that if these mucous membranes escape or resist the invasion of flat pustules, their cutaneous neighborhood is, on the contrary, the most frequent and earliest seat of them in new-born infants.

In the mouth, on the contrary, the difficulty of this study vies, to a certain extent, with its importance. These specific ulcers attack every

point, from the lips to the isthmus of the throat, sometimes penetrating into it from without, sometimes confined to the mucous membrane itself. Although they may have been observed indifferently in different spots, there are some, however, in which they appear to localize themselves more especially. Such are, the furrow which unites the gums and the lips; the frænum of the upper lip (pointed out by Sanchez[1] as the spot in which pustules are "the least equivocal sign of the venereal poison"); an antero-posterior horizontal line, occupying the middle of the cheek; the edges and tip of the tongue, the roof of the mouth, the pillars of the velum, and the tonsils. But they sometimes affect one only of these sites, and, in this case, it is most frequently, after the lips, the borders of the isthmus of the throat which are alone attacked by them. This view is important for practice. It is probably to the extension of mucous patches toward the larynx that a particular phenomenon common enough in this affection is due. Rosen,[2] in tracing his sketch of the symptoms, speaks of "a hoarseness frequently occurring without any manifest cause." Colles[3] remarks that the voices of infected children present a characteristic change of tone; that they have "a peculiarly hoarse cry." Several observations which I have collected on this subject make similar mention of this circumstance, so that it appears to me to be more valuable, as an element of diagnosis, than a purely accidental epiphenomenon. The simple fact of hearing this hoarse voice may suffice to awake a suspicion of the existence of some general infection. The modification of the voice here alluded to depends, in my opinion, upon the development of mucous tubercles or a simple erythema in the neighborhood of the aryteno-epiglottidean ligaments. It is analogous to a syphilitic dysphonia sometimes observed in adults at a corresponding period, *i.e.*, coincidently with the first outbreak of secondary symptoms. Of this affection I have endeavored to particularize the seat and the origin, and to its study I propose to devote a separate work.

The physiognomy of these lesions is the same in the mouth: a superficial ulcer maintaining that character; always appearing in the shape of a circle, a crescent, a horseshoe, or an ellipse; of a diphtheritic white color, becoming red only when on the point of healing; such are the characteristics of this form of ulceration. The irregularly circular shape is sometimes the result, not of a single ulcer, but of several grouping themselves in such a manner as to produce it. It is especially on the inner surface of the lips that we can form a clear idea of this characteristic tendency.

A single glance generally suffices to recognize both the existence and the nature of the change, but if it is more deeply situated, the examination may become very difficult or even impossible. The experienced practi-

[1] Maladie vénér., Sanchez, 1785.

[2] Mahon-Lamauve, Recherches importantes sur l'existence, la nature des Mal. syph. dans les femmes enceintes, etc., p. 371.

[3] On the Ven. Dis., p. 269.

tioner knows, it is true, how to take advantage of the moment at which the child cries, and by placing it in a good light and quickly depressing the tongue with a small spoon, generally succeeds in obtaining a view of the back part of the mouth. But this manœuvre, so difficult even in the adult who lends himself to it, is far more embarrassing in a child who resists, and often meets with encouragement to do so in the ill-advised tenderness of its parents. Although I have examined, or rather because I have examined, a great number of infants at the breast, I consider myself justified, without fear of contradiction from those accustomed to such researches, in propounding the following axiom:

The practitioner can never answer for the non-existence of lesions in the posterior part of the mouth of a new-born child.

If we bear in mind that mucous patches sometimes affect only one side of the isthmus of the throat, and if we take into consideration the great number of nurses really infected by children whom the practitioner has declared and certified to be exempt from any disease in the mouth, we shall at once understand the justice and importance of this remark.

Various affections may be confounded with mucous patches in the mouth. Stomatitis and mercurial ulcerations will easily be distinguished by the circumstances of their origin, by their gray color and peculiar odor, and by the redness and swelling of the neighboring parts. Aphthæ, round, isolated ulcers, clearly circumscribed and confined to a small number of points, present no great difficulties of diagnosis. Muguet, with its pseudo-membranous or *cryptogamic* secretion, would be more liable to cause confusion on account of the form which it assumes, if the irritation of the mucous membrane by which it is preceded, its rapid progress, and the functional derangements by which it is accompanied, did not aid the diagnosis. It appears unnecessary to speak here of *noma* or gangrene of the mouth, so essentially different from the comparatively slight affection of which we are treating.

V.—*Papulæ and Squamæ.*

These two kinds of eruption, which are but degrees of the same anatomical lesion, are very rarely observed in new-born children in the well-marked form which they present at a more advanced age. This is true to such an extent that a distinguished writer on syphilis (Egan) affirms "that he has never seen an instance of papular syphilitic eruption." The explanation of this is to be found in the fact, that the soft texture of the skin, at this period of life, favors the development of mucous patches and the other moist forms of cutaneous affection. In fact, the cutaneous secretion does not assume, at that age, either the hardness or the dryness observed in the adult; and no sooner are the soft and thin squamæ formed at the summit of a papule or on the surface of a patch, than they are macerated by the normal moisture of the part and become detached before they can acquire,

by the evaporation of their fluid constituents, the pearly and brittle appearance which they would assume in the adult.

We also often see in children anomalous eruptions, not furfuraceous at the summits, copper-colored patches without desquamation. The dermatologist familiar with these peculiarities will recognize in these, as it were, bastard forms—in these *squamæ sine squamis*—the fundamental change which constitutes them; and will profit by his experience to adapt the local and general treatment to the real and not the apparent lesion. For squamæ belong to a more advanced period of syphilis than exanthems, and do not yield to the same topical remedies. We see that these details are not of importance for nomenclature only, but must be borne in mind in practice.

This difference of form according to age is so great that even in the palms of the hands, where syphilis in the adult never produces anything but pustules and squamæ, true mucous patches are sometimes observed in new-born children, although they are, it is true, less moist and less secreting there than elsewhere.

It will readily be surmised that although squamous syphilitic eruptions are rare in infants, they do occur, being the result of causes which vary in degree in individual instances. It sometimes happens, then, that true scales are observed in situations and in subjects more favorably constituted for their production. Thus Cazenave[1] quotes two instances of horny eruption, observed in the palms of the hands and soles of the feet of children whose parents were affected with constitutional syphilis prior to their conception.

Deutsch[2] reckons among the secondary symptoms of new-born children a *syphilitic psoriasis of the eyelids*, complicated with sycosis and soon accompanied by induration of the mucous glands. Is this affection really squamous, or are not these supposed squamæ merely the dried mucus, which, in inflammations of these glands, always covers the free edge and part of the external surface of the eyelids?

VI.—*Pustules.*

If we accept the terminology of the generality of writers, the history of this form of eruption would be almost the whole history of congenital syphilis. There is, in fact, no venereal affection of the skin to which the name of pustule has not, more or less correctly, been applied. A child is said to be born *covered with pustules;* this is what we hear repeated every day by medical men, as well as by others; the term conveys a distinct impression, and is therefore made to serve as a designation for the most dissimilar changes. Thus mucous patches, in which no one has ever observed the elevation of the epidermis by pus which constitutes a pustule,

[1] Cazenave, Traité des Syph., p. 418. [2] Op. cit.

are known to many only under the denomination of "flat *pustule*," or "mucous *pustule*." Bertin has contributed not a little to maintain this confusion by enumerating seven kinds of pustules, the *prominent*, the *flattened*, the *tubercular*, *French-pocky*, *crusted*, *chancrous*, and *ulcerated*. Nisbett speaks of copper-colored pustules, which *resemble scorbutic blotches*. Even the latest and best writers have not always been able to avoid this deplorable vagueness. I will quote Bouchut[1] as an instance of this, who, having to translate from the English the words "tuberculated condylomatous," could find no better mode of rendering them than the expression "whitish flattened pustules" (pustules blanchâtres aplaties)!

When confined to the only lesions which deserve the name, the description of pustules in new-born infants will, on the contrary, be very short, although, with copper-colored spots, they form the most frequent syphilitic eruption at that period of life. But the most remarkable point in connection with this form of eruption is that it does not, like the two preceding ones, belong to a particular period of the disease. Far from this, we see it coincide with the signs of the outbreak of the general infection, or constitute, at a later period, one of the symptoms of the most advanced cachexia. With some attention, however, we may succeed in recognizing in the form and appearance of the lesion certain differences dependent upon the difference in the period of their manifestation. In this way three kinds of pustules may be distinguished:

Syphilitic acne, appearing early and following papulæ, and being itself, if rightly considered, nothing but a more prominent papula, whose point has suppurated. These hard, indolent, isolated, pimples are observed chiefly on the back, buttocks, shoulders, and chest. The pus remains some days, is then absorbed, or discharged externally, and the crust once detached, a small cicatrix appears in its place. Although this eruption may spread over large surfaces, it is a simple and harmless variety, both because it denotes a less confirmed diathesis, and because it does not leave unsightly traces of its existence.

Syphilitic impetigo, so common on the hairy scalp in adults, is, as we have seen, replaced in new-born children by mucous patches, which assume a peculiar character. True impetigo, at an early age, appears on the face in the form of numerous confluent pustules, which soon burst and form, by the rapid evaporation of the fluid parts of the pus, yellow, thick, and prominent crusts. These unfortunate children, covered with a hideous mask, which renders them objects of horror and disgust—which, moreover, impedes the exercise of the functions most essential to life—often sink, less under the effects of syphilis than under the local effects of this grievous symptom.

When these crusts are removed, the subjacent surface is seen to be

[1] Gaz. méd. de Paris, 1850, p. 297.

studded with superficial, grayish ulcerations. If left uncovered for a single night the crust is found, next day, to have formed again, unless an anti-syphilitic treatment has been followed during the time.

The chest, neck, axillæ, and groins are also sometimes the seat of this kind of impetigo. But, remarkably enough, the eruption has no tendency to spread by confluence; it has favorite spots, which it neither leaves nor oversteps.

Syphilitic impetigo may be distinguished from simple impetigo, so common in infants at the breast, by the copper-colored areola which surrounds it, by the ulcerations concealed by the crusts (which are absent in the non-syphilitic eruption), and by the dryness and deeper color of the crusts themselves. Lastly, the co-existence of an entirely similar eruption on the hairy scalp is as rare in syphilitic as it is common in the simple form of impetigo.

Syphilitic ecthyma.—This graver form of eruption does not appear until an advanced stage of the disease, or when the latter is very severe, or, again, when the subject of it has, either originally or from the influence of morbific conditions, a debilitated constitution. It presents itself on the extremities, especially the legs, and on the buttocks, in the form of violet-colored patches, which are afterward converted into pustules, and the fluid, instead of being simply purulent, is mixed with blood. In this form of eruption, a thick, blackish, circumscribed crust, surrounded by a livid or copper-colored areola, covers a deep ulcer. The ulceration forms the most striking symptom as well as the most serious danger, for, if the necessary treatment be deferred, or be not assisted by generous diet, the loss of substance progresses and in a few days the disease commits irreparable ravages.

Non-syphilitic ecthyma sometimes produces analogous disturbances in individuals enfeebled by privations and misery; but it attacks adults only, and, above all, old people. When ecthyma is observed, then, in new-born children, the circumstance of the age alone renders it highly probable that it is of a syphilitic character.

VII.—*Bullæ.*

Some children present at birth, or a few days after it, an eruption of bullæ, the principal seats of which are the soles of the feet and palms of the hands. Paul Dubois and Depaul, who have carefully watched the progress of this eruption, have seen it commence by a violet tint of the skin, confined to these two situations. In from forty-eight to seventy-two hours the parts become covered with a great number of vesicles, varying in volume from the size of a hemp-seed to that of a large lentil, and which are filled from the first with thick and milky serum. These vesicles gradually enlarge and pass into the form of bullæ; the fluid they contain becomes

yellower, and deeper colored. At the same time other similar elevations of the cuticle are seen, either near the first eruption or upon other parts of the body, but, except in the plantar and palmar regions, they are less numerous and smaller, and the violet color of the skin around them is not so well marked, while on the trunk this tint is generally wanting altogether.

With the progress of the local affection the child wastes away and becomes enfeebled; it cries continually and refuses the breast. The face changes and its expression is that of suffering. Meanwhile the bullæ break and blood mixed with sanious pus escapes. Large scales of epidermis, covered in some places with two crusts, occupy the affected part. If these are removed, the surface beneath is seen to be formed by the dermis, "which is red and intact in some cases, superficially eroded in others, more deeply so in a small number; the edges of the wound, in the latter case, are sometimes slightly raised and rounded, presenting at different points the appearances of the latest periods of ecthyma."[1]

The general health of children suffering from such symptoms is so rapidly and seriously affected that they usually sink in a few days. I have seen one instance, however, in which a child, born of a mother accidentally affected during pregnancy, survived four months, and recovered from pemphigus without having undergone any anti-syphilitic treatment. It, however, never regained its strength, although its nurse was twice changed and it was afterward treated specifically. It died in a state of exhaustion, the cause of which remained obscure, as no *post-mortem* examination could be made. Depaul[2] has published a somewhat similar case, in which the bullæ and another concomitant and evidently syphilitic eruption were cured; but new complications then occurred within the chest, under which the child sank when only nineteen days old. The *post-mortem* examination showed the presence of several indurated nodules in the substance of each lung. In a case of Mr. Startin's, a child, both of whose parents were syphilitic, recovered from pemphigus, but died in ten days of a pleurisy which supervened shortly afterward.[3]

Galligo (*Gazetta medica Toscana*, 1852, p. 123) was more fortunate, having saved two children by the administration of bichloride of mercury, of which one was born with pemphigous bullæ and the other similarly attacked a month after birth.

Such a group of phenomena being present, the inference of a syphilitic origin will be the more confident in proportion as the admissions of the parents, and the co-existence of other evident signs of syphilis, give it support. Toward the end of the last century Wichman propounded this view, which Jörg[4] and Dugès afterward supported with their authority. Stoltz[5]

[1] Extrait du Discours de M. Paul Dubois, séance de l'Acad. de Méd., July 8, 1851.
[2] Gaz. méd. de Paris, 1851, p. 472. [3] Medical Times and Gazette, 1854, p. 134.
[4] Manuel des Mal. des enfants, 1826. [5] Thèse de M. Hertle, Strasburg, 1847.

regards pemphigus as the most common expression of congenital syphilis, and Cazenave,[1] after having been for some time in doubt as to the nature of this affection, in the end adopted the same opinion. Its opponents have, however, not been either less numerous or less zealous than its advocates. As early as 1794, Osiander[2] refused to admit this eruption among the manifestations of venereal disease. Krauss[3] equally with Gilibert,[4] in his special monograph on pemphigus, does not connect it with syphilis.

But these differences of opinion, overlooked in the past, vanish before the striking discussion which occurred in 1851 at the Academy of Medicine in Paris, between the chief representatives of the two opinions, Paul Dubois for its syphilitic origin, and Cazeaux against it. In saying *for* and *against* we do not, perhaps, sufficiently take into account the restrictions which these two honorable orators vied with each other in combining with the expression of their convictions; they both more than once intrenched themselves behind the doubt of the sage, appealing to new observations and repudiating any wish to pre-engage the future. But, in spite of this apparent reserve, the most marked opposition did not cease to develop itself; and we conscientiously believe that we are correctly interpreting their thoughts, if not their words, in attributing to each of them, on this point, the part and the authority of the head of a school. Let us sum up the arguments advanced on both sides.

Dubois says, that pemphigus in new-born children is syphilitic:

I. Because in the generality of cases he has been able to discover traces of a previous syphilis in the parents of the children affected, or to obtain from them convincing information on that point.

II. Because other lesions, characteristic of syphilis, have several times been observed simultaneously in the child, viz., once a perforating ulcer of the septum nasi; once ulceration of the velum palati; once caries of the tibia (by Laborie); well-marked syphilitic roseola, three times (by Cullerier and Galligo), once by Moreau and Baron, once by Depaul; a pustular crusted eruption of the face; and once caries of the orbital vaults, recognized by Cruveilhier. We shall not speak of the affections of the thymus gland and lungs, which have frequently coexisted with pemphigus, because their syphilitic character, although very probable, would itself require more direct demonstration.

On the other side, Cazeaux avers that pemphigus in new-born children is not syphilitic, because:

I. The description of so-called syphilitic pemphigus in new-born children differs in nothing from the simple pemphigus of adults. There are the same characters, without any of the special signs appertaining to syphilitic eruptions and distinguishing them so clearly from ordinary eruptions.

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[1] Traité des Syph., p. 276.
[2] Mémoires de méd. et d'accouch.
[3] De pemphigo neo-natorum, 1834.
[4] Monogr. du pemphigus.

II. This kind of pemphigus appears at birth, or immediately afterward; but the symptoms of hereditary syphilis do not generally show themselves until much later. (This argument has been more than sufficiently refuted, at least in respect to its exclusiveness, by what has been said in the Section on Etiology.)

III. At l'Ourcine, where a great number of women are delivered who are either themselves infected, or pregnant by men who are so, a child has never been seen to be attacked by pemphigus.

We quote only the direct arguments, for the examination of the personal estimates and disputes to which each of them has been subjected would be out of place here. They are to be found, however, in the minutes of these instructive meetings. What must occupy us exclusively, and furnish us with the basis for our opinion, are the facts which the discussion has brought to light, and the accuracy of which has borne the test of a long and hot discussion which would have been fatal to every inexact allegation. But, confining ourselves to these solid elements, we must regard as established:

A. *That pemphigus in new-born children presents none of the physical characters which distinguish a syphilitic from a simple cutaneous eruption.*—The circular form does not exist. The copper color is also wanting; and the violet tint, which might be taken for one of its modifications, does not, as even Paul Dubois admits, appear around the bullæ when these are situated on the trunk. Neither is there anything more constant or significant in the presence of yellowish pus in the bullæ, which, according to Bouchut,[1] would be a good distinctive sign. The ulcerations, most frequently absent and very superficial when they exist, rarely attain a certain depth, and never have the floor grayish nor the edges raised. But Gilibert, Rayer, and Gibert have seen ulcerations following simple pemphigus in the adult.

B. *That syphilitic pemphigus in the adult is a rare affection, if it occur at all.*—No author has mentioned this form of eruption as occurring in adults. Gilibert has no place for it in his classification, rich as it is in divisions. Gibert[2] says formally: "Neither in new-born infants nor in adults is the pemphigoid form observed as a manifestation of syphilis; I have met with no instance in my own practice, nor in the special hospital at which I have had the opportunity of making observations." Cazenave[3] writes: "Syphilitic pemphigus is not a very rare affection, but it attacks new-born infants exclusively, or, at least, I know no other form." Ricord,[4] who admits the existence of syphilitic pemphigus in the adult, confesses "that there is no distinctive sign serving to distinguish syphilitic from non-syphilitic pemphigus, as is the case in other cutaneous affections."

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[1] Traité prat. des Mal. des nouv.-nés, p. 869.

[2] Séance de l'Acad. de Méd., June 17, 1851.

[3] Op. cit., p. 277.

[4] Séance de l'Acad. de Méd., July 1, 1851.

Thus, while all the syphilitic eruptions of new-born children have their equivalents in those of adults; while syphilodermata are all, without exception, distinguished by peculiarities of aspect so marked that, where these are absent, the practitioner is justified in declaring the affection not to be venereal, pemphigus alone is to form an exception, and to take a place in this family, so recognizable by its features, without presenting the least physical resemblance to any one of its members. To prove the identity, resemblance being wanting, it is sought to argue from the origin and relations of this eruption. But are these titles available? Is this a case in which to say that the substance outweighs the form? Certainly, if all *pemphigoid* children proceeded from parents infected with syphilis, and all also presented, simultaneously with the bullæ, evident traces of constitutional syphilis, we might shut our eyes to the want of characteristic marks, and regard these coincidences as proofs. But this is not so. Under such circumstances, we often address, and regret to have done so without any result, a biassed inquiry to the father and mother. Most frequently pemphigus is the sole appreciable lesion in the child.

Let us confess, however, that the number of cases of infantile pemphigus, in which the existence of venereal disease in the parents has been ascertained, has been sufficient to make an impression upon unprejudiced minds. And, although most of the members of the Academy still entertain doubts as to the nature of this eruption, the mixed opinion, that of *conciliation*, which makes it not an immediate result of syphilis, but an indirect sequela of the exhaustion which that disease produces, has obtained many suffrages. I adopt this solution, but would fain explain and define it.

That a subject rendered cachectic by the influence of unhealthy conditions may contract pemphigus would be easy to prove by facts. That syphilis in the parents, by poisoning the sources of life in the fœtus, should produce the same effect, may also safely be admitted. But when we compare numerically the consequences of the different causes, we are surprised to see that (although so many other elements of enervation, besides syphilis, affect the product of conception), in a given number of new-born children affected with pemphigus, syphilis in the parents will much more frequently account for it than any other cause. This naturally leads to the idea that venereal poisoning by the father or mother, without having operated precisely as a *specific* agent, has yet played a more special part in the production of the disease than any other debilitating influence.

But if, for the purpose of determining the essential nature and the range of this influence, we observe what occurs in adults, we shall see that in them syphilis produces, and that very frequently, certain symptoms which, without being signs of syphilis, nevertheless depend upon it in the most evident manner. Thus a chloro-anæmic condition very frequently supervenes at a certain period of the secondary stage; and alopecia affects a great number of syphilitic subjects about the same period. Are these,

taken singly, sufficient proofs of the existence of syphilis? Undoubtedly they are not; for these derangements are not accompanied by the physical characteristics of a venereal lesion; and further, they are very frequently met with in other individuals, and are due to entirely different causes. But, after all, they are so often allied to syphilis that whenever I see a man, in the flower of his age and the fulness of health, suddenly affected by chloro-anæmia or a falling off of the hair, I say to myself, and that without being often deceived: *syphilis has something to do with that.* These effects, however, which are not signs but indications; these changes, which would not justify us in condemning, although they authorize us to accuse, serve us as examples whereby to fix the limits within which we believe pemphigus to depend upon syphilis. It does not bear the stamp of that disease; it springs from it specially, but not specifically. When developed to a certain extent, the diathesis produces it by reason of the debility it has imparted to the organism, and not as a consequence of the poisoning it has effected. This eruption rather indicates the degree of the infection than reveals its nature. It is not a reagent; it is a thermometer. But may not the thermometer, by the regularity and constancy of its movements on the approach of certain bodies, sometimes point out to the attentive observer something more than their mere temperature? Does not, for instance, the boiling-point of certain liquids suffice to show that they belong to the class of ethers? Now this has been precisely the case with pemphigus for the eminent pathologists who have examined the circumstances under which it manifests itself, and who have erred only to a slight and excusable extent by assuming a link of intimate causality where only a mediate relationship exists. In a therapeutical point of view, the examples of chlorosis and alopecia already quoted further explain the success of certain modes of treatment, while they reduce to its true value the assistance these may render us in drawing conclusions as to the syphilitic character of the lesion. Thus, Depaul has published a case of pemphigus in a new-born infant, in which the eruption improved and disappeared almost entirely during the administration of bichloride of mercury. Two similar results have been obtained by Galligo. But every one knows that in syphilitic chlorosis mercury, *given with moderation,* is the best remedy. The same remark applies to the alopecia which supervenes during secondary affections (provided always that it has not been caused by the abuse of mercury). Thus the treatment of this diathesis is at the same time the treatment of even its remote effects. This does not mean, however, that the specific has an equal power here to that which it displays over constitutional affections clearly defined and without complication; for, let us state in conclusion, the cases of Depaul and Galligo are at present the only ones in which anti-syphilitic treatment has been observed to check the progress of congenital pemphigus.

It has been my good fortune to observe a case well fitted to demon-

strate the truth of what has just been advanced; I give a somewhat detailed history of it, on account of its direct application to the question at issue, and in spite of its having occurred in an adult:

Joseph L——, aged thirty-four, of a feeble constitution, pale and drooping, who had long followed the occupation of a weaver in the village of H——, had had, while at work, a chancre which he treated by cauterization only, followed by various symptoms which were slight but denoted venereal poisoning: obstinate and frequently recurring pustules about the anus and scrotum, scales upon the hands and feet, and thick crusts on the hairy scalp. He was freed from these by treatment in six months.

Restored to his occupation, J. L—— was never more than a year without being tormented by the reappearance of some of the sequelæ of this disease. Pains, vague at first, became fixed in the right elbow and in both tibiæ; tumors were formed several times in the velum palati and suppurated.

Under the influence of nocturnal pains, this man, worn out already by previous excesses and by the unhealthy circumstances of his occupation, gradually became weaker and more emaciated. Few regular curative attempts were directed against these later syphilitic changes, in spite of the great injury manifestly inflicted by them on his general health. At the end of July, 1845, he entered the hospital de l'Antiquaille, for an eruption of about six weeks' standing. At that time, after a few days of general uneasiness, there had risen up on his arms, legs, and belly, large bullæ, which soon collapsed, so that, when he entered the hospital, nothing was to be seen in those regions, which were redder than in the normal condition, but the epidermis folded and dried up in the form of thin scales. The chest and neck, less early and less severely affected, presented only a slight desquamation.

All these parts were painful to the touch. For the last fifteen days febrile excitement had existed, continuous, with evening exacerbations; there were violent thirst, a clammy mouth, want of appetite, and progressive debility. The eruption had no coppery tint.

An old, stationary, almost indolent node was at the same time observed on the right tibia; on the left tibia, near the knee, there was periostitis of more recent origin, the seat of nocturnal pains; below the right elbow a large, resisting, painful node, which had already slightly inflamed the skin. All these symptoms had existed some time before the outbreak of the pemphigus, and did not become aggravated after its appearance. Iodide of potassium was administered, but it only lessened the periosteal pains, and did not exercise so marked an influence on the node, the prominence of which, however, was somewhat diminished.

As for the pemphigus, several fresh bullæ of which developed themselves under my observation, it progressed steadily and rapidly. Gelatinous sulphur baths, then alkaline baths, preparations of iron and quinine, combined with opium and aided by appropriate topical applications, were insufficient to stay the progress of this affection or the deleterious influence exercised by it, in its turn, upon the general health; the patient gradually became weaker, and sank two months after his admission. In this case, the diagnosis of chronic simple pemphigus was made by several medical men. There can be no doubt, therefore, of the nature of the disease. As to its origin, several influences concurred to explain its appearance in this individual, but there is no doubt that the tertiary syphilitic condition, so

highly debilitating, was its principal cause, as it was from the moment at which the lesions of that period manifested themselves that the extreme constitutional relaxation, the actual agent in the production of pemphigus, commenced.

VIII.—*Coryza.*

The history of syphilitic coryza is a singular one. All writers, without exception, regard it as an inflammation of the mucous membrane, and designate it accordingly. Bertin[1] classes it among the venereal catarrhs; and yet it differs essentially from the phlegmasiæ, as the enumeration of its symptoms will show.

In this affection the child discharges from the nostrils a fluid which is at first thin and serous, but which soon acquires more consistence. It appears *stopped up*, an expression which denotes vulgarly, but very clearly, the state of the voice and of respiration in such a case. This obstruction of the nasal breathing is effected by a somewhat curious mechanism. While the child is engaged in sucking, the respiration is carried on through the nasal fossæ; the air therefore circulates more rapidly at that moment in these cavities, and the evaporation of the fluid which they contain becoming increased in the same proportion, the result is the deposition of the solid parts of this secretion, or in other words, the formation of *crusts*. But so soon as a crust is formed it provokes new ones; for so much the more does it narrow the passage, and accelerate the respiration and evaporation, etc. It is by this vitiated circle that the rapid obstruction of the nostrils in children attacked by coryza of this kind is to be accounted for.

At the same time the continual efforts which this embarrassment occasions detach the crusts, which, in the case of a membrane so vascular and so predisposed to hemorrhage, cannot occur without causing some loss of blood. It frequently happens, in fact, that as, under such circumstances, the cause only becomes aggravated by time, the discharge of blood may attain the proportions of an epistaxis. Trousseau and Lassègue quote instances of this.[2] Thus, as a first source of danger, the respiration may become very much impeded by this circumstance alone. Bertin[3] "has seen three children affected with coryza, of which the discharge having dried up entirely obstructed the passage through the nostrils, so that they could breathe through the mouth only."

As a direct consequence, nutrition is equally threatened, and in its most immediate source. In fact, as the mouth becomes the sole passage for the admission of air, it will easily be understood that since the child can no longer breathe while sucking, it will only take the breast to quit

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[1] Bertin, op. cit., p. 38.

[2] Archives Gén. de méd., October, 1847.

[3] Op. cit., p. 108.

it again immediately, not being able to retain it sufficiently long for nutrition without being exposed to the danger of suffocation.

At the end of a very few days, however, the nasal secretion changes its character and assumes a sanious appearance. There are also seen, on the external surface of the nostrils, pustules, fissures, true and sometimes deep ulcerations, lesions which not unfrequently invade the alæ nasi and the upper lip. Ulcers of the throat often complicate this affection, which may spread as far as the larynx and render the voice dull, hoarse, or almost extinct. At a more advanced stage, but one which is in general very rapidly reached, the bones become affected, and fragments of them are found in the crusts thrown off. On looking obliquely at the face of the child, when placed against a window, we observe the septum nasi to be perforated. Lastly, in a great number of cases, the ultimate flattening of the nose shows that it has lost its support in consequence of the destruction of the bones which form its framework.

A third cause of death arises from the absorption of the putrid gases which are developed. Every one knows the horrible fœtor which pus acquires in the anfractuosities of the nasal fossæ. The gaseous products of decomposition, carried to the lungs by the aid of the inspirations, the energy and frequency of which are doubled by the obstacles which impede them, naturally exercise the most deleterious influence upon the health of children against whom so many fatal chances are combined.

This combination of symptoms is one of the most frequent occurrences in congenital syphilis. There are few infected infants which do not present it to a certain extent. At the same time that it is one of the most common, it also often constitutes one of the earliest signs; sometimes, however, it does not manifest itself until a later period of the disease.

We know that in the opinion of the earlier writers this condition was so decidedly a blennorrhagia that Bertin[1] points out metastasis as one of its causes, saying that it "may follow ophthalmia promptly suppressed." Rosen said, "It is a running like a cold in the head." According to Cazenave,[2] "the patient experiences the ordinary symptoms of coryza." It is even instructive to observe into what errors very distinguished observers have been led by setting out with this erroneous view. Thus fissures, pustules, and ulcerations were observed on the exterior. Was it not very natural to conclude from this that the same lesions occupied the interior of the nasal cavities? But, no! Carried away, no doubt, by the conventional name of the disease, Trousseau and Lassègue[3] write that these serious lesions are *caused by the contact of the nasal secretion* with the skin in the neighborhood of the nose.[4]

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[1] Op. cit., p. 39. [2] Op. cit., p. 440. [3] Op. cit.

[4] Mistakes as to the cause of the ulcers have also sometimes occasioned, by reciprocity, errors as to the nature of the primary lesion. Thus, in an account of congenital syphilis, given by the Faculty of Medicine of Paris, in 1775, in the form of a con-

Assuredly, if this explanation were true, perfectly similar eruptions ought infallibly to appear on the skin of the eyelids from the contact of the much more acrid, abundant, and continuous discharge furnished by blennorrhagic ophthalmia. And yet, with the exception of an erythematous redness, more or less vivid, similar to the redness of the upper lip which accompanies simple catarrhal coryza, who has ever seen serious changes occur in such cases? Who, above all, has ever detected the existence of ulcers?

If we reflect how chimerical, how contrary to daily experience, this assertion of Bertin is, that the ophthalmia of new-born children terminates in, or is converted into coryza; if we reflect upon the differences which distinguish the sketch given above from the description of simple inflammation of the nasal fossæ, we shall easily be convinced that this affection can no longer retain the name under which it has hitherto been known.

But if we deprive it of this name, by what other shall we replace it, and, first of all, is there any other comprehensive enough to include all its symptoms? Is not a disease in which ulcers, necrosis, pustules, a discharge, and hemorrhage are observed, rather a collection of different changes than the expression of a single lesion?

It appears inexpedient to attempt to answer this question too positively, either one way or the other. It is well known that the affection does not consist in a pure and simple phlegmasia of the pituitary membrane, and its precise nature is quite unknown. The nasal cavities admit of too insufficient direct examination to authorize us to regard any single lesion as the exclusive cause of the symptoms, or *à priori* to reject others. In the neighborhood of the nostrils Bertin has seen pustules, Trousseau and Lassègue ulcers, and Depaul vesicles. It is very possible, then, that the starting-point of the changes observed has been sometimes one, sometimes another of these forms, often several of them combined. Logically speaking, these suppositions are legitimate, as autopsies seldom come to our aid, and even if they did would not tend much to elucidate the problem, on account of the *post-mortem* modifications imparted to the physiognomy of these elementary anatomical changes. However, considering the comparatively early period at which coryza generally shows itself, the nature of the syphilitic manifestations which usually coincide with its appearance in analogous parts, as the mouth or the anus, and the form of the eruption which may sometimes be observed at that time about the openings of the nostrils, I should be inclined to think that the affection most frequently consists in the development of mucous patches on the Schneiderian membrane. This hypothesis would accord very well with

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sultation addressed to the physicians of Aix, this phrase occurs: "Cracks are formed at the commissures of the lips, accompanied by *a suppuration of the same character as that of the eyes*, which thickens into blackish crusts upon the face, and gives rise to ill-conditioned aphthæ in the inside of the mouth."

the change from serous to purulent which the nasal discharge undergoes; for it has been ascertained that the mucous patches secrete a serous fluid so long as they are not ulcerated, and pus when they have been converted into ulcerations. Neither is the view refuted by the destruction of the bones which not unfrequently accompanies coryza. In fact, the disease in question is not a necrosis caused by the direct action of the venereal poison upon the osseous tissue, but caries, resulting from the circumstance that the ulcers, by laying bare a portion of the bony skeleton, deprive it of its elements of nutrition. The bone ceases to live because its blood-vessels have been injured; but any other cause, whether mechanical or vital, which destroyed the mucous membrane to the same extent, would produce precisely the same effect. If necrosis is more common here than in other parts of the body, it is solely because the bony plates, besides being very thin, are at many points, as on the septum, covered by mucous membrane on both their surfaces, and, consequently, there is a double chance of the ulcers producing those effects upon the vitality of the bones which have been stated to follow the destruction of this membrane.

Syphilitic coryza cannot, then, be very easily mistaken for a simple nasal catarrh. If such an illusion could exist at first, it would soon be dissipated by the rapid progress and threatening character of the disease. Trousseau and Lassègue give us as a distinctive sign of syphilitic coryza, that it always commences in the interior of the nostrils, that its complete evolution is effected there, and that it has less tendency to spread to the external parts than to penetrate deeply toward the pharynx, or to advance along the *velum palati*. To conclude, this condition is the more worthy of serious study in that it is frequently the only symptom of hereditary syphilis, and always one of the earliest.

[Exception may be taken to the assertion here made. Although coryza is undoubtedly one of the earliest lesions noticed in hereditary syphilis, it is not the only symptom; indeed, it is seldom seen apart from mucous patches of the anus and mouth and an eruption of the skin, and it is frequently conjoined with the cachexia of hereditary syphilis.—F. R. S.]

IX.—*Onychia.*

There are two kinds of onychia, or syphilitic affection of the nails. The one consists only in inflammation of the matrix of the nail, with coppery discoloration and desquamation, more rarely pustulation, of the skin which covers it. This, the simple form, more frequently affects adults than new-born children. It involves but few changes in the texture of the nails. I find it noted only once among the facts which have come to my knowledge. A child, observed by Albers,[1] presented soon after birth a small pustule at

[1] Ueber Erkenntniss und Kur der syph. Hautkrankheiten, p. 19.

the side of the nail of the left thumb, and several other pustules, which assumed a decidedly syphilitic character, appeared on different parts of the body.

At other times an ulcerative process is carried on at the same spot. The matrix of the nail, being the seat of an organic change, soon reacts upon the nail itself, whose conditions are so directly influenced by its pathological modifications. In the former case, the nutrition of the nail was interfered with. In the latter, its vitality is destroyed by the serious lesion of its generating organ. The nail sometimes becomes dry, whitish or violet-colored, and wrinkled; it becomes detached and falls off, being surrounded on all sides by suppuration, without having undergone these preliminary changes. Bertin has twice [1] seen the nails of the hands and feet thrown off by this affection of their roots. It may even happen, where the diathesis is very intense, or has not been combated at the proper time, that the renewal of the nails may be deferred, or the exfoliation may take place several times in succession before the re-establishment of entirely normal conditions. Guerard [2] gives as a singular instance of this persistence the following observation: "I have seen," he says, "in a new-born child affected with syphilis, the nails of the hands and feet gradually become atrophied, grow longer and narrower in appearance, and fall off at last to make way for more healthy nails, which underwent the same process; and this happened three times in succession, before really sound nails remained."

X.—*Lesions of the Osseous System.*

Notwithstanding the vital hyper-activity of the osseous system connected with its growth, and the normal modifications of its texture in infancy, syphilitic lesions of the bones, so common in the adult, are extremely rare in infants. We scarcely find them mentioned at all in any special work on this subject; and the annals of science offer, at most, five or six well-authenticated instances.

This infrequency will easily be understood when we reflect that, in general, constitutional syphilis in adults does not affect the bones until it has long laid waste the external tissues, the mucous membranes, and the skin. But one of two things occurs; the disease which attacks the new-born child is either severe or slight. In the former case, it usually proves fatal before it has reached the tertiary stage; in the latter, specific treatment most frequently suffices to neutralize it; and in this manner the disease fails to reach the more advanced stage in which changes in the bones are usually developed.

Is this immunity of the osseous system to be attributed to the state of inaction in which its mechanical functions remain at an early age? I admit

[1] Op. cit., p. 59.

[2] Journal de Siebold, t. x. § 553.

for this circumstance no other effect than that of defending the bony skeleton from traumatic lesions and contusions, which, here as in the adult, might become the exciting causes of periostitis or extosis.

Not only are syphilitic affections of the bones rare in new-born children, but they scarcely ever assume the well-marked forms which render the diagnosis of them, at a different age, so easy. Bertin[1] is the only writer who speaks of having seen cases of periostitis; and he adds that, *not to multiply observations too much*, he will only quote one such. And even in this single case we can scarcely regard his affirmation as a description, since he contents himself with saying that the child was the subject of a *tumor the size of a pigeon's egg* on the great trochanter, and a considerable periostosis on the upper and posterior part of the elbow. It must, however, be admitted that the coexistence of characteristic pustules in this subject left little doubt as to the nature of the osseous lesion.

With the exception of this case, all those which are known belong to changes the specific nature of which is still much less certain. Laborie has quoted an instance of congenital pemphigus complicated with caries of one of the tibiæ.[2] Cruveilhier[3] speaks of a "child born at the full term, ill developed, with characteristic symptoms of constitutional syphilis. The bones which compose the orbital vaults were eroded in a part of their thickness." This was nothing less than caries. We have already seen that coryza is not unfrequently accompanied by a change in the thin bones which form the internal framework of the nasal fossæ. But it is then always only a question of caries or necrosis. Rosen quotes a case of caries of the hard palate, coinciding with evident symptoms of syphilis. But in instances of this kind, as in the case of the necrosis which complicates coryza, the lesion of bones is probably only the effect of its denudation by the ulcers which have destroyed the mucous membrane. It is an accident which has nothing specific in it, since any other cause producing denudation might give rise to it. Doublet and Mahon[4] have seen suppurating tumors of the exterior of the cranium, in new-born children affected with syphilis, produce caries of the neighboring bones. Here the same reservations are to be made as above.

Bouchut[5] has not unfrequently observed a lesion which is neither caries nor degeneration of the periosteum, but premature induration of the long bones. Instead of being soft, spongy, vascular, incomplete in form and easily cut, he has seen tibiæ and femora, or at least the middle parts of

[1] Op. cit., p. 69.

[2] Séance de l'Acad. de Méd., July 1, 1857.

[3] Anat. Pathol., 15th obs.

[4] It appears useless to describe separately these tumors, which Bertin compares to "gummy syphilitic tumors."

[5] Traité prat. des Mal. des nouv.-nés.

them, solid, compact, eburnated, and not to be broken or divided by a cutting instrument. This lesion appears to him to indicate that an abnormal and hurried activity in the evolution of the bones coincides with the plastic exudations into several organs observed in cases of infantile syphilis.

Lastly, other lesions incident to the second period of childhood, such as white swellings and rachitis, may be referred indirectly or partially to hereditary syphilis. I shall speak further on of this cause, of the manner in which it is to be understood, and of the limits within which its influence is to be restricted.

[Increased observation and increased facilities for observation enable us to correct the statement here made by M. Diday, that "the annals of science offer, at most, five or six well-authenticated cases instances."

So far from this being the case, it is the opposite, there being now an embarrassment of material of such a kind as incontestably to prove the frequent existence of syphilitic disease of the bones in hereditary syphilis. Parrot, of France, has in late times called attention to this symptom of infantile disease, and has fully described the various stages through which it passes. The disease attacks, the epiphyses of the bones and the shafts of long bones. Usually it attacks the bone at some time after birth, and not immediately at birth. It may be delayed for several years and only appear at the time when the child reaches the age of puberty, constituting one of the varieties of late inherited syphilis. It may end in absorption with some atrophy of the bone and loss of substance producing decided deformity, or else it may result in suppuration and necrosis.

The first sign of this affection consists in an enlargement of the shaft of the bone, if one of the long bones be the seat of the attack, due to an exudation beneath the periosteum. This enlargement is frequently painful and shows signs of inflammation. It may be seated either in the middle or at the extremities of the bone. As the disease progresses, the swelling, which was at first hard and brawny, becomes softer, sometimes throughout its entire extent, or, what is more usually the case, at certain points; this softening goes on until at one or more points openings occur which exude a thin viscid material, or, if the amount of inflammation have been great, pus. On probing the cavity thus made, dead bone will be felt at the bottom of the opening. As suppuration continues, portions of the necrosed bone are cast off, and this goes until all the dead bone is got rid of, and as the periosteum is also destroyed, no new bone is formed. The place of the bone is sometimes occupied by fibrous material, when a much shortened finger is the result; if no tissue replaces the bone the finger then becomes useless and hangs limp, and had better be removed as it interferes with the movements of the other fingers. Such was the case of the boy whose finger and toe are shown in the wood-cuts, the history of which I will give in a few words.

Case.—J. McW——, aged five years, was brought to the N. Y. Dispensary for treatment of a dactylitis of the ring-finger of the left hand. This began, early in the autumn of 1878, as a simple enlargement of the shaft of the first phalanx of the finger without any signs of inflammation. At the time of examination the finger was swollen, was hard and rather sensitive to the touch. It measured $2\frac{3}{4}$ inches in circumference. It was also noticed that he had a similar condition of the second toe of the right foot, but in a less degree than the finger. There were besides on each thigh a pustular eruption which was covered with a slight crust. These had been present since the previous summer.

The mother gave the following history. Sixteen years before she had a "rash" over her entire body, which lasted for several weeks and was accompanied with sore throat and alopecia. Two years after, she had "sores" upon her face and arms, which sores lasted off and on for two or three years. She had had seven children, but no miscarriages. Only two living children, this one and a younger one (which was not seen). This latter child she said was suffering with "snuffles," but nothing further could be obtained in the way of history.

The child was brought under observation on March 20, 1879, and on April 22d it was recorded that the skin of the finger had ulcerated in several places and a slight discharge of thin pus exuded from these openings. The swelling was somewhat reduced and the pain had diminished. In the toe, the pain and swelling were both less; there was then no inflammation nor ulceration. On July 10th, the swelling had materially diminished and the discharge was less. There was a loss of the power of extension in the finger. The bone had for a long time been necrosed, and on September 11th a piece of dead bone was removed. The finger later on became useless from loss of motion, and as the ulceration and necrosis were extending, the finger was removed. In the latter part of September the wound had almost entirely healed. February 12, 1880, it was noted that there was a slight thickening of the metacarpal bone, the size of a small almond and similar in shape. This swelling was painless.

The toe meantime also broke down with ulceration, but subsequently recovered, under treatment without becoming necrosed.

When the flat bones are attacked a similar condition of things takes place. Exudation takes place beneath the periosteum which may be absorbed, or failing that, necrosis and exfoliation of the bone ensue.

The epiphyses of the long bones are also the seat of trouble, becoming detached or, rather, not becoming united to the body of the bone. Sometimes suppuration about the joint takes place and the bone is lost. —F. R. S.]

Syphilitic Dactylitis of Finger and Toe.

XI.—*Characteristic General Appearance.*

A child born with the germs of syphilis, and which will present in a short time the most marked manifestations of that disease, may come into the world with every appearance of health and even of a vigorous constitution. This fact is well known; every writer quotes instances, and numerous clinical proofs of it will be met with in the course of this work.

In the generality of cases, however, this is not the usual course of things. From their very birth, and although as yet without any distinctly syphilitic symptoms, the subjects of hereditary taint may often be recognized. There is a certain *habitus*, a general physiognomy, about the expression of which parents already taught by a previous accident of the same nature, or an experienced physician, are rarely deceived. "Jam fatalem typum insculpsit senectus maximè præcox," remarks Faguer; or, as Doublet has more simply expressed it, "they present a miniature picture of decrepitude."

Bertin (page 96), while acknowledging the correctness of this picture, asserts that it is most commonly the portrait of a syphilitic child during the last moments of its life. I cannot join in his estimate of it. There is undoubtedly an aggregate of external characteristics peculiar to the syphilitic cachexia. The emaciation and extreme debility which it induces may, to a certain extent, be compared to the general aspect now in question; but the two conditions, that of the precursory signs of the diathesis and that of its ultimate effects, are, nevertheless, very distinct. Not only are they separated chronologically by the entire duration of the disease, but well-marked features further distinguish them. The following description will place this beyond doubt.

Next to this *look of little old men*, so common in new-born children doomed to syphilis, the most characteristic sign is the color of the skin. Trousseau,[1] who has studied it carefully, thus describes it. Before the health becomes affected, the child has already a peculiar appearance; the skin, especially that of the face, loses its transparency; it becomes dull even when there is neither puffiness nor emaciation; its rosy color disappears, and is replaced by a sooty tint, which resembles that of Asiatics. It is yellow, or like coffee mixed with milk, or looks as if it had been exposed to smoke; it has an empyreumatic color, similar to that which exists on the fingers of persons who are in the habit of smoking cigarettes. It appears as if a layer of coloring matter had been laid on unequally; it sometimes occupies the whole of the skin, but is more marked in certain favorite spots, as on the forehead, eyebrows, chin, nose, eyelids, in short, the most prominent parts of the face; the deeper parts, such as the in-

[1] Trousseau, Gaz. des Hôp., 1848, p. 78; and Trousseau and Lassègue, Arch. gén. de Méd., 1847.

ternal angle of the orbit, the hollow of the cheek, and that which separates the lower lip from the chin, almost always remain free from it. Although the face is commonly the part most affected, the rest of the body always participates more or less in this tint. The child becomes pale and wan. Though sometimes resembling that of Ephelis, this discoloration is generally much less marked, and would not attract attention if it were not accompanied by a deep pallor of the skin, and were not unequally distributed. It is preceded by a general paleness, which renders its appearance more appreciable; it increases slowly, and requires at least a week for its complete development.

On considering the peculiar nature of this discoloration, the early period of the disease at which it is observed, the puffiness (*the œdema*),[1] the prostration by which it is accompanied, and the rapidity with which, in common with its complications (apparently so deep-seated), it disappears under the influence of anti-syphilitic treatment, I was led to ask myself whether this condition, so distinct from the manifestations of syphilis properly so called, might not depend upon the chloro-anæmia, the existence of which Ricord has pointed out as coincident with the first outbreak of secondary symptoms, and of which every writer on syphilis has seen numerous instances. There is surely no reason why the same specific cause should not produce the same effects, at whatever age it may be in activity. The semeiological evolution of syphilis is so exactly similar in new-born children and in adults, that it would not be surprising to find this characteristic also common to both. We should rather have cause to be surprised, I think, if it were wanting in the former, since it so often presents itself in the latter that there is scarcely a physician who has not observed it at the commencement of the disease. It will suffice, however, to have called the attention of practical men to this point. Stethoscopic and clinical examinations, so easy for those who are placed in favorable circumstances, will soon have decided the question. The therapeutical importance which it is capable of attaining sufficiently recommends it to their zeal.

Paucity or tenuity of the hair, the absence of the eyebrows and eyelashes, the scanty development or slow growth of the nails, are generally also seen in cases of this kind, and complete the special physiognomy which they impart to the child.

XII.—*Lesions of the Viscera.*

Exaggerated by the older writers, whose nosological tables had, in the case of every serious disease, a place in reserve for a "*var. syphilitica*," these lesions have at the same time been more restricted and better studied

[1] Bertin (op. cit., p. 109) has pointed out the coincidence of this symptom with those which may lead us to anticipate the appearance of genuine syphilitic lesions.

by modern writers. There exists, in reference to their mode of production, a fundamental difference between the acquired syphilis of adults and congenital syphilis. In the former, the changes in the liver, the heart, the lungs, or the brain, almost always assume the form of tubercles; their progress is slow; they do not appear until a very advanced stage of the disease, and thus belong as much by their date as by their character to the tertiary period. The new-born child, on the contrary, presents them very early, often even as the first symptoms of the affection of which it has received the germ *in utero*. In infants also, excepting when occurring in the liver, they assume, for the most part, the suppurative type, and their progress is extremely rapid; which characters seem to class them among the affections of the secondary stage.

The frequency of visceral lesions in infants is now beginning to be appreciated; but they are still far from being recognized as often as they really exist. The more our means of diagnosing them in the living subject are improved, the more we shall have opportunities of multiplying clinical instances of them. By their aid we shall be enabled to explain more rationally the debility and deaths so common in children affected with syphilis, consequences hitherto regarded as the direct effect of the poison on the radical powers of the economy. Let us hope that recent investigations, by showing that the causes of death are to be sought rather in certain local lesions than in an undefined influence, will not only have contributed to facilitate the diagnosis, but will open out new and fruitful views for therapeutics.

A. *Lesions of the lungs.*—Without pretending to deny the existence of any of the syphilitic pulmonary affections, of which Lagneau, Junior,[1] has recently enumerated as many as seven kinds, we shall only have to describe here, for fear of transgressing the limits of our subject, the special change in the lungs the description of which Depaul[2] submitted, in 1851, to the judgment of the Academy of Medicine. It consists in the presence of indurations of a density similar to that of the liver, and of varying number and volume, in the parenchyma of the lung. Some of these occasion an appreciable prominence of the pleura; and the organ then presents at the corresponding point a yellowish color, quite different from that of the rest of the surface; this is the first stage of the disease.

At a more advanced period, the indurated nodule becomes softened; on being cut open, it is found to be composed internally of a compact yellowish-gray tissue, in the centre of which is a cavity containing a seropurulent fluid, more or less abundant according to the size of the induration. The microscope reveals in it the most marked characters of pus.

This purulent fluid, which was at first infiltrated or agglomerated in

[1] Des mal. pulmon. causées ou influencées par la Syphilis—Thèse de Paris, 1851.

[2] Séance de l'Acad. de Méd., April 29, 1851; Gaz. Méd. de Paris, 1851, p. 392.

small cavities, afterward runs together so as to form collections of considerable amount.

These indurations are, in general, already developed at the time of birth; they run their course rapidly, and, it may be said, with certainty, to an early and inevitably fatal termination. The symptoms which result from them are those of lobular pneumonia, to which this form of disease has, moreover, very close relations.

Syphilitic abscesses in the lungs of new-born children generally coincide with other lesions. Of these, some are manifestly syphilitic, while others are of a doubtful character, and it must be confessed that the latter are those the existence of which has been most frequently pointed out. Thus Depaul has observed, in several cases of this disease, suppuration of the thymus gland, pemphigoid bullæ, and an "increase in the volume of the liver."[1] Paul Dubois and Cruveilhier have shown that pemphigus is often met with in new-born children who sink under these abscesses of the lungs. There are cases on record, however (and Depaul's Memoir, read before the Academy of Medicine, July 22, 1851, furnishes such an instance), in which the pulmonary induration was the only visceral lesion. In Depaul's case it is specified that "the liver, the spleen, and the brain were examined without the least change being discovered." Dr. Ch. Teirlinck[2] also relates the history of a woman, the subject of numerous flat pustules, who was delivered at seven months of a very small, old-looking child, which lived only four hours. It had, in the left lung, a single indurated nodule, from seven to eight millimetres in diameter, in which the microscope revealed the presence of pus-globules. No other lesion, whether upon the skin or in the viscera of the different cavities, could be discovered by the closest examination. In the face of these facts, it cannot be assumed that this affection of the lungs is the ultimate manifestation of a cachexia which has disorganized all the viscera essential to life. On the other hand, in a certain number of cases which are doubtless the minority, the presence of pustules and of mucous patches, the evident and unequivocal signs of constitutional syphilis, has been recognized.

Frequently, in fact, the parents have undeniably been a prey to the syphilitic diathesis. Depaul has even demonstrated, in reference to this point, that the pulmonary affection may have resulted from the most varied modes of origin. Thus he has once observed it in a child whose mother was healthy, but whose father had contracted an indurated chancre two months before the date of impregnation. In a second case both parents had been affected with syphilis. In a third, the mother had contracted syphilis in the second month of pregnancy. In the case related by Teir-

[1] Does not this brief mention point to the specific induration of the liver, a disease which was probably not known to Gubler, or at least not well described by him until after the appearance of Depaul's work? There is reason to think so.

[2] Annal. et bul. de la Soc. de Méd. de Gand, 1852, p. 93.

linck the existence of constitutional syphilis in the mother was indisputable, but it could not be determined whether she had contracted it before conception or only afterward.

B. *Suppuration of the thymus gland.*—Paul Dubois has connected his name with this curious affection by the conscientious researches which he published in 1850 [1] on the anatomical changes to which it gives rise. Having seen children, whose parents had had syphilis, sink in a few days after birth, without being able to explain this termination by the severity of the eruptions on the skin or mucous membranes, he was induced to subject their viscera to a more strict examination than is generally made, and thus frequently succeeded in detecting the existence of the affection of which we are now speaking.

The affection almost always presents itself in the same form. Externally, the gland offers nothing extraordinary in respect either to its color or its volume; but on squeezing it after an incision has been made into it, small drops of a semi-fluid, yellowish-white matter, having all the appearances of pus, are easily pressed out. Donné, to whom Dubois sent a little of this fluid for analysis, recognized all the characters of genuine pus in it.

In all the cases quoted by Dubois, the pus appeared to be disseminated through the tissue of the organ and not collected in distinct cavities. Depaul observed this distribution in one case, but in a second he [2] remarked that the gland presented a small cavity in each of its lobes, filled with grumous, yellowish, and rather thick matter. In this child the thymus gland was somewhat larger than usual.

Of five children affected with this form of disease, the history of whose cases has been given by Dubois and Depaul, one was born dead; two lived a few minutes only; one, six days, and one, eight days.

In two, the lungs were found in a state of suppuration; in a third, "the lower lobe of the right lung was unusually hard;" in a fourth, the lungs presented small ecchymoses in the form of red stains.

In four out of the five cases, unequivocal and generally well-marked traces of pemphigus were observed. No other symptom allied to the ordinary phenomena of syphilis was met with, either in the skin or mucous membranes of these children.

As for the origin of the disease, in four of the cases syphilis existed either in the father, or in the mother, or in both, for a longer or shorter time before conception. In the fifth case, no information could be obtained concerning the previous health of the parents.

Dubois points out, for the guidance of future observers, a possible cause of error in these researches. During the greater portion of fœtal

[1] Gaz. Méd. de Paris, 20e année, p. 392.

[2] Mémoire cité, obs. 1.

life, the thymus gland secretes a whitish viscous fluid, which might, with a little want of care, be mistaken for pus. But this fluid has a white, opaline, transparent appearance, which should prevent its being confounded with pus properly so called, as the latter is characterized by its creamy consistence, yellow color, and opacity.

According to this author, the production of pus, under such circumstances, would be the result of inflammation of the ducts and reservoirs of the organ, as described by Sir A. Cooper. The particular seat and mode of origin of the suppuration appear to him to be proved by the usual distribution of the purulent matter, and by its appearing in small drops on the surface of an incision, when sufficient pressure is made.

c. *Lesion of the liver.*—It is sufficient to glance through the *Aphrodisiacus* to see how important a part the earliest writers on syphilis assigned to the liver, which they regarded not only as the principal seat, but even as the generating organ of the "French disease." In our days these ideas have been completely abandoned; and possibly we have gone too far in the opposite direction. During a long period but very few cases were recorded in which deposits in the liver were found in the subjects of tertiary syphilis. Such instances were looked upon as extremely rare; and the existence of a common affection of the liver, allied to syphilis, was no longer believed in, when Gubler[1] drew attention to this point by giving pathological demonstration of the occurrence of a peculiar change in that organ in a great number of new-born children affected with hereditary syphilis. More fortunate than Depaul, he had no difficulty in procuring admission for this new affection among the least disputed effects of syphilis; the instances of the disease being so numerous and convincing that there was not a moment's hesitation about the position to be assigned to it.

When the lesion has reached its maximum, the liver is sensibly hypertrophied, globular, and hard. It is resistant to pressure, and even when torn by the fingers its surface receives no indentation from them. The elasticity of the organ is such, that if a wedge-shaped piece taken from its thin edge be pressed, it escapes like a cherry-stone, and rebounds from the ground. When cut into, it creaks slightly under the scalpel.

The distinct appearance of its two substances has completely vanished. On a uniform, yellowish ground, a more or less close layer of small, white, opaque grains is seen, having the appearance of grains of semola, with some delicate arborescences, formed of empty blood-vessels. On pressure no blood is forced out, but only a slightly yellow serum, which is derived from the albumen.

Gubler has only three times seen the change carried to this extent. It is most frequently much less marked. Thus, the tissue of the organ is

[1] Gaz. des Hôp., 1848, January number; and Gaz. Méd., 1852, p. 262.

firm, without having that extreme hardness and yellow color which might admit of comparison to some kinds of flint. The interior of the organ presents rather an indefinite color, shaded with yellow or brownish red, more or less diluted ; but in no part is the parenchyma quite healthy in appearance.

Again, the change may be found in circumscribed parts only ; Gubler has seen it confined to the left lobe, to the thin edge of the right lobe, and to the *lobulus Spigelii.* He ascertained by injections that, in the indurated tissue, the vascular net-work is almost impermeable ; that the capillary vessels are obliterated, and that even the calibre of the larger vessels is considerably diminished. Microscopical examination enabled him to discover the cause of this disposition by revealing in the altered tissue of the organ, in every degree of change, the presence of fibro-plastic matter, sometimes in considerable, sometimes in enormous quantity. In the portions intervening between the diseased parts, the cells of the hepatic parenchyma maintained all the characteristics of the normal condition.

The physical consequences of the deposit of these elements are an increase in the volume of the liver, the compression of the cells of the *acini,* the obliteration of the vessels, and the consequent cessation of the secretion of bile. In all the subjects examined after death by Gubler, he always found the bile in the gall-bladder of a pale yellow color and very sticky, that is to say, very rich in mucus and very poor in coloring matter.

The blood had almost always undergone a marked change, its solid portion having the consistence of soft currant jelly and the fluid portion being unusually abundant. In one subject this change coincided with an extreme discoloration of all the tissues and with innumerable ecchymoses. In one case the lungs presented the characters of acute pneumonia, and in two that of chronic or pancreatiform pneumonia.

Lastly, the concomitant syphilitic lesions consisted in patches of psoriasis, pustules of lenticular ecthyma, and of deep ulcerative ecthyma, mucous patches, fissures at the circumference of the natural outlets and in the folds about the joints, and inflammation of the nasal fossæ, with purulent and sanguineous secretion.

The syphilitic nature of the hepatic affection is rendered very probable by the constant coincidence of some of the preceding symptoms in all children in whom it has been observed. But what completes the proof is, that Gubler has not met with it in any other general disease except congenital syphilis. Trousseau, Heurteloup, Cullerier, Depaul, Lenoir, and Lebert have also seen instances of it. In eight of the nine cases observed by Gubler, the external manifestations of constitutional syphilis were so well marked that the diagnosis was quite satisfactory. It is to be regretted, however, that it has not, in general, been possible to obtain information as to the condition of the parents. This gap does not appear to me to offer a valid objection to the syphilitic nature of the hepatic affection ; but in-

formation of this kind, if sufficiently exact, would have thrown much light upon the special etiological conditions under which it is produced, a really important point in its history, and one which has hitherto remained very obscure. In two patients under the care of Cullerier, it was thought that infection and conception must have occurred about the same time, since they were covered with secondary eruptions in an advanced stage. This circumstance, however, constitutes, after all, only a probability.

Lastly, the induration of the liver may be developed during intra-uterine life. Desruelles and Cazenave have each seen its characters well marked in a child which died directly after birth.

According to Gubler, this lesion, analogous to syphilitic sarcocele or to the subcutaneous indurations known under the name of "gummy tumors," belongs to the tertiary class. Not that he had observed, coexisting with it, other tertiary symptoms properly so called. All the symptoms, on the contrary, belonged to the secondary phase of constitutional evolution, though to its later manifestations. Moreover, other infantile visceral lesions, which may fairly be ranked with that of the liver, also present the same coincident symptoms.

The signs of this affection are the more difficult to recognize, inasmuch as they generally precede by only a few days the fatal termination which is its usual consequence. The little patients moan and throw their legs about incessantly, as if in much pain. Vomiting and diarrhœa, or constipation, supervene; the abdomen becomes tympanitic and tender on pressure; the pulse quick and small; the expression of the face is changed, and death occurs two or three days after the first appearance of the symptoms.

It is a very remarkable fact that, notwithstanding the extent and degree of the disease, even when the whole of the liver is invaded by the induration, there is never any jaundice. Gubler states that he has not seen a single instance in which that symptom appeared.

In special cases, where there is reason to suspect it, palpation and percussion may enable us to recognize the syphilitic induration of the liver, by revealing an increase in the volume and density of the organ. Portal had already called attention to this symptom, and well described the manner of ascertaining its existence.

Gubler states that he once saw this condition accompanied by anasarca of the lower extremities and part of the trunk. But arguing that, if it had depended upon obstruction of the circulation in the vessels which traverse the liver, serous effusion into the peritoneal cavity must also have been present; he attributed it rather to the state of the blood, and to the profuse diarrhœa which had occurred.

We shall have to speak hereafter of the therapeutical measures recommended by Gubler for subduing this formidable degeneration, when its existence is suspected. It is sufficient, at present, to state that in a new-born infant affected with syphilis, which afterward sank under an inter-

current disease, Cullerier found upon the liver a fibrous patch, a kind of cicatrix, which appeared to him to have resulted from plastic infiltration of this kind. The child had been cured of syphilis by the administration of the proto-iodide of mercury.

Although Gubler has carefully studied the special change in the liver which coexists with syphilis, he has not assigned any distinct place to that condition among the successive phenomena of that affection. According to him, it is simply a lesion of the tertiary order. It is, however, one of the first symptoms, in point of time, in new-born children, and he himself admits that no tertiary phenomena, properly so called, are observed to coexist with it; and further it is proto-iodide of mercury and not iodide of potassium which has been found to be the specific for it! Are these considerations sufficient to gain acceptance for the very different interpretation of the same lesion proposed [1] by myself? In my opinion, the induration of the liver in new-born children is exactly analogous to the induration of a chancre in the adult. It is due to the transmission of the poison furnished by the blood of the mother, determining in its course the same organic reaction, of which induration is the expression, which the poisonous pus absorbed during coitus induces around the chancre, and then in the first lymphatic gland which it traverses. On this theory—and according to my observation such is the fact—induration of the liver ought not to occur when the infection proceeds from the father. The hypothesis must of course be tested by future observation of facts. I shall abstain for the present, therefore, from forming any definite opinion as to its value. Strong probabilities, however, exist in its favor, from the very great similarity which sight, touch, and even microscopical examination reveal between the change of texture which constitutes this condition of the liver and the induration of primary chancre.

D. *Peritonitis.*—Simpson [2] has seen several cases of peritonitis prove fatal in children whose mothers had presented symptoms of constitutional syphilis. He was led, in consequence, to regard this form of inflammation as a by no means infrequent result of syphilis transmitted by the mother.

Gubler observed in some of the children affected with induration of the liver evident traces of inflammation of the peritoneal covering of that organ, and thus the opinion of Simpson acquires fresh weight. It is still, however, an open question whether the two lesions may exist separately, or whether, in the cases which Simpson has recorded, a certain degree of induration of the liver coexisted with the inflammation of the peritoneum, but escaped notice.

[Within the past few years other cases of a similar kind have been reported, which go to prove the existence of an inflammation of the perito-

[1] Gaz. Méd. de Paris, 1852, p. 312.

[2] Edinburgh Medical and Surgical Journal, No. 137, p. 19.

neum conjoined with other manifestations of inherited syphilis. Wilks of London speaks of adhesions occurring between the liver and the diaphragm and, in two cases, of a general peritonitis. Von Bärensprung in his work "Die hereditäre Syphilis" says, "In some post-mortem examinations I have found fresh fibrinous exudations on the peritoneal covering of the liver; in other cases there were firm ligamentous adhesions between the liver, spleen, loops of intestines, and abdominal walls." Probably this peritonitis ensues as the result of a hepatitis or of inflammation of the spleen; indeed, it would be singular if with syphilitic inflammation of these organs the peritoneum should escape.

E. *Intestines.*—The stomach and intestinal track are also the seat of lesions in hereditary syphilis. The disease usually occurs as a diffuse exudation of gummy material in the muscular and serous coats of these viscera, but sometimes it appears in the form of gummous nodules scattered throughout the organ. Oser of Crakow has described two cases of such infiltration where he found in the intestines numerous small ulcerations, some of which corresponded to Peyer's patches, others to the isolated follicles. The serous membrane was covered with exudation and there were exudations on the peritoneum. In the second case there were found in the stomach and small intestine a large number of small white nodules which were firmly adherent to the muscular coat of these organs. In all three cases microscopical examination showed a very abundant exudation of small cells into the submucous tissue, with decided thickening of the walls of the vessels and of connective tissue. The mesenteric glands were enlarged and were surrounded by a formation of young tissue cells.

F. *Heart.*—Here we again find the same pathological conditions at work, namely, the two varieties of infiltration, diffuse and circumscribed, the latter form being less commonly met with than the former. Copland in the "Transactions of the Pathological Society of London" gives the description of an interstitial myocarditis with nephritis, associated with gummata of the liver and lungs in a syphilitic infant of three months of age. The heart weighed $1\frac{3}{4}$ oz., was square in shape with a rounded apex. Both sides contained clots and the serous layers composing its walls were perfectly smooth and translucent. The myocardium was, however, very firm and resistant and of a uniform pale pinkish-yellow tinge; the walls of both ventricles and the septum were very thick and cut with a creaking sound.

The microscope revealed an extensive infiltration in all the tissues of the organ of small round cells imbedded in a structureless matrix between groups and bundles of muscular fibres. This infiltration was most abundant about the small arteries, but it was by no means limited to their

vicinity, for even individual fibres were here and there separated by a row of round cells. The muscular fibres had retained their normal striated appearance, although where the larger tracts of cell infiltration occurred they tapered off and were lost within it.

This gives a good picture of the diffuse variety of syphilitic myocarditis, and the circumscribed variety differs but slightly from this except that it is more localized. Parrot, in *L' Union Médicale*, speaks of having seen such a lesion. In his case there was a central portion the color of sepia. Around this the parenchyma was of a light yellowish color. In this yellow peripheric zone the muscular fibres were not altered, but between them a large number of round nodules were developed. In the centre these elements, which were more abundant there than elsewhere, instead of being colored red by carmine were stained yellow. The structure of the muscle was friable and resembled myeline. Scattered about here and there were groups of cells undergoing granular and fatty degeneration.

6. *Kidneys.*—These organs are the seat of infiltrations similar to what take place in other viscera. The two varieties of diffuse and circumscribed are the ones which are seen. In the former the parenchymatous tissue of the kidney is changed to a yellowish or brown hue and the entire organ is of a paler color than ordinary. The cortical substance is also paler and less easily detached than in the healthy kidney. The texture of the viscus during the early stages is firmer and more consistent than it should be and under the knife gives a creaking sound. When examined under the microscope the parenchyma of the organ is found to be filled with small round cells of a pale grayish or of a yellowish hue, which extend into the tubuli and pelves of the kidneys. These cells are often the seat of granular or fatty degeneration. The circumscribed form shows as nodules imbedded in the substance of the viscus, and these nodules when cut into are seen to be of a grayish-yellow color and are devoid of any exudation. They are hard and resistant and consist of an agglomeration of cells with fibrous material interposed among the cells. Sometimes softening takes place, either at the centre or at some point near the circumference of the neoplasm. The contents are made up of broken-down cells of connective tissue and of the normal elements of the kidney, granular detritus and sometimes pus or else gummous material mixed with cells undergoing fatty degeneration.

The symptoms occurring during life are few and but little has been said about them in medical literature. Mr. Messenger Bradley has, however, reported an instance in the *British Medical Journal* of an infant four months of age in which albuminuria and œdema of the upper extremities disappeared under a mercurial treatment. The child was the subject of inherited syphilis.

H. *Spleen.*—The spleen is often found enormously enlarged in syphilitic children and sometimes distends the abdomen from its size. Pathologically it is thickened and is the seat of cellular infiltration and of gummous deposits.

I. *Eye and ear.*—The affections of the eye due to inherited syphilis are perhaps the best known of all the lesions which attack the special organs. All the ocular tissues from the conjunctiva to the retina are attacked and the lesions are exceedingly grave from the serious consequences which may ensue. The conjunctiva is the seat of mucous patches during the earlier forms of inherited syphilis, and of pustules and ulcerations during the later stages. These ulcerations when seated at the edges of the lids or at the angles of the lids produce serious deformities, such as ec- or entropion, necessitating an operation for their relief, which, from the vitiated condition of the patients, is always a hazardous undertaking. The affections of the cornea shows themselves in two ways, either as a general diffuse keratitis or as an interstitial keratitis. The former variety begins with a hazy condition of the cornea, betokening a low type of inflammation, which may attack the cornea throughout its entire extent, and appears to commence in the interstitial layer and from thence extends to the epithelial layer. The conjunctiva is deeply injected and minute blood-vessels can be seen running over the surface of the cornea itself. Hutchinson has figured a case in which the entire cornea is covered with injected vessels to such an extent as to present the appearance of a vascular surface of a deep red color. This condition is not frequently met with, and must, I believe, be rare. In a large experience at the Manhattan Eye and Ear Hospital of this city I have never seen such a case, nor have any of the ophthalmologists of my acquaintance with whom I have conversed on the subject. As the disease progresses, the interstitial layer of the cornea becomes the seat of diffuse purulent foci, varying in number, and these purulent deposits sooner or later break down, unless the disease is arrested. The ulcers thus formed are exceedingly obstinate and resist the usual methods of cure adopted for this form of disease. Concomitant with these ulcerations, the iris is also the seat of a lymphatic exudation, which may be so abundant as to entirely occlude the pupil, and as the symptoms are not attended with much pain, and moreover as the haziness of the cornea prevents a very accurate examination of the eye, the blocking up of the pupil may go on until the latter is permanently closed from the hardening and organization of the lymph which has been effused. Upon cicatrization these ulcers nearly always leave some opacity of the cornea behind.

The second variety, the punctate interstitial keratitis, commences in the membrane of Descemet as minute points of a gray or dull white color, unattended with any inflammation or pain. These grow very slowly and do

not, so far as I know, ever end in ulceration. Sometimes two or three of these punctæ, if close together, may coalesce and in that way interfere with vision, but otherwise, unless numerous, they do no particular mischief.

Iritis is another form of ocular disease seen in hereditary syphilis, and this, from the gravity of the consequences, is an important symptom. It appears in two ways, as a subacute or as an acute iritis. In the subacute form the iris is of a dirty color and loses the clear look which the healthy iris possesses. It looks as though it were more or less infiltrated with fluid and sometimes seems to project into the anterior chamber (bombé). Adhesions now take place between the pupillary margin of the iris and the cornea, or if the iris be not projected forward, between the iris and the anterior capsule of the lens. There is some pain, as is shown by the attempts of the child to rub its eye and by its constant crying ; photophobia is also present, forcing the child to keep its eye closed.

In the acute type these symptoms are intensified to a very marked degree. The injection of the conjunctiva is pronounced, the iris is of a dirty color and opaque and bulges forward, sometimes to such an extent as to obliterate the anterior chamber. The same bulging occurs posteriorly against the lens. Later on the surface of the iris is covered over with a fibrinous layer of exudation which blocks up the pupil in the manner already described. Beneath this layer the iris is deeply injected and the conjunctival vessels engorged with blood. Severe pain is present, together with lachrymation and photophobia, rendering it a matter of some difficulty to examine the eye, because the child keeps it tightly closed. This inflammation is not confined to the iris alone but extends to the deeper layers of the eye, the ciliary body, the uveal track of the iris, the choroid and the retina.

In both varieties the cornea may be affected, as has already been mentioned.

One of the chief dangers of this form of iritis is the rapidity with which the inflammation extends and the loss of vision which is likely to ensue. In the first place permanent occlusion of the pupil may result, the effused lymph becoming so tough as to resist all attempts to induce absorption, when the only resource left is the formation of an artificial pupil. This, in common with all operative procedures in persons or infants the subjects of inherited syphilis, is a hazardous operation, because the tissues are in an unhealthy condition and apt to assume a low grade of inflammation and break down, when the latter state of the patient is worse than if matters had been left as they were. Rarely does it happen that the mischief is confined to the iris, the choroid is nearly always more or less affected concomitantly with the iris. The symptoms of choroiditis are pain and photophobia, and these cannot be expressed by the infant with sufficient distinctness to attract the surgeon's attention to them. Hence

it often escapes notice until the infant has grown up to childhood, when a partial loss of vision is the first thing which calls attention to the antecedent choroiditis. When the eye is examined ophthalmoscopically, it is seen that the choroid is covered with white patches of irregular shape with aggregation of cells scattered here and there throughout their extent. These patches are of a dull white color and not attended with any vascularity although at the commencement, when the disease was in its inception, the tissue was probably congested and hyperæmic.

There is nearly always some degree of hyalitis present in these choroidal affections, and the capsule of the lens is likewise the seat of exudation and opacity. I do not know that cataract has ever ensued as a direct consequence of these opacities of the capsule, although Hutchinson in his work on "Diseases of the Eye and Ear consequent on Inherited Syphilis," mentions several cases of cataract which occurred in persons the subjects of hereditary syphilis.

Retinitis is the gravest of all the affections of the eye which result from the poison of hereditary syphilis. It is more frequently seen in the cases of late inherited diseases than during infancy, although it is not wanting in this latter. The first step in the process is an exudation which occurs between the choroid and the retina, causing, in many cases, detachment of this latter. The infiltration also goes on in the layers of the retina, in the rods and cones, causing sooner or later thickening of the retina due to the proliferation of cells. This infiltration during the early stages of the retinitis produces an œdema of this tissue. The physical symptoms induced are such a degree of diminution of vision as to amount in many cases to blindness. In the earlier stages photophobia is present. Another variety of retinitis which is the sequel of hereditary syphilis is the one known as "retinitis pigmentosa," in which deposits of pigment are found on the retina.

The physical symptoms of this form are well described in the following case reported in the *Dublin Quarterly Journal* for May, 1871, and quoted in the "Royal Ophthalmic Hospital Reports" for 1871, vol. vii.

The patient was a boy, eleven and a half years old, who came under Mr. Swansy's care with imperfect vision of the right eye. There was external strabismus and nystagmus; the eyeball was somewhat smaller than the other. The iris was dull looking, its fibrillæ not being distinctly marked as in the normal eye. The pupil dilated well with atropine. The sight was much worse in the dusk of the evening. By good light the patient could read with this eye small words of No. 8 (Sn.) at 6 ″ and CC at 15 ′, glasses making no improvement. The eccentric field of vision was unimpaired, for even with a very imperfect illumination he counted fingers in all directions. The left eye was slightly myopic, but its vision was nearly normal and externally it appeared quite healthy. The ophthalmoscope revealed changes . . . . The disk was of a dirty gray color and its margin indistinctly

defined. The veins were normal, but the arteries were somewhat diminished. In the periphery of the retina were deposits of pigment in the form of numberless small dots and streaks. During six months that the case remained under observation, although these specks and streaks became more numerous and extended somewhat more toward the centre, yet they had no tendency to become confluent or to form themselves into stellate or bone corpuscle shapes. They were not deposited along the course of the arteries; on the contrary, they appeared to avoid the vessels and to occupy, by preference, the spaces lying between them. At one place only were there specks which lay over a vessel. On the apparent inner side of the disk were patches from which the choroidal epithelium had been removed, and at the periphery the atrophy had probably gone deeper. In the left eye there were also choroidal changes, but no retinal pigmentation had occurred.

The patient was of a sallow, earthy complexion; one upper incisor was very characteristically notched. When a fortnight old he had suffered from ulcerations about the anus, etc. The family history was confirmatory of the diagnosis of inherited syphilis.

The symptoms which differentiate the syphilitic from the ordinary retinitis pigmentosa are the shape of the deposits, their localization apart from vessels, and the absence of concentric contraction of the field of vision.

The pathological conditions which occur in these cases of retinitis pigmentosa resulting from hereditary syphilis have been described in the "Royal Ophthalmic Hospital Reports," vol. iv., for 1863, by Dr. Bolling A. Pope of Virginia. The case from which the specimen was obtained was that of a child, seven months old. It was affected with hereditary syphilis, and died of phthisis pulmonalis. The doctor writes as follows:

"I succeeded in obtaining good specimens of the retina both in a fresh and hardened state. The retina gave no evidences of atrophy, while here and there in its posterior half it was almost double the normal thickness. In some of these thickened portions there were masses of pigment. The pigment itself differed in no respect from that contained in the epithelial pigment cells, but the cells themselves had lost their characteristic appearance; probably from the action of the process hereafter to be described. The thickening of the retina was the result of a proliferation of its proper elements, but especially of those elements in the granular layers. It is certain that the radial fibres of Müller participated in the process, and were possibly principally affected, still it is almost certain that the cells composing the granular layers were also, at least partially concerned, for in passing from the centre of the fibrous mass, where it breaks through the outer surface of the retina, toward the normal layer of the granular layers, a gradual transition from the attenuated spindle-shaped forms to the normal forms of the granular layers was to be observed. The radial fibres of Müller were much thickened, especially in the inner layers of the retina; and in some vertical sections showed a beautiful series of strongly developed

arches, with their convexities resting upon the separating line between the outer granular layer and the layer of rods and bulbs. The pigment was often entirely imbedded in the thickened retina, but without relation to the retinal vessels, as is the case in the typical form, and, to a certain extent, in those cases more allied to these than the one now treated of. At other times the pigment mass was on the surface of the retina, but surrounded and embraced by the fibrous mass, which here and there had broken through the outer surface of the retina and grown together, thus forming a mass composed of fibres curving as they passed from the retina and then running parallel to its surface. In one instance the layer of rods and bulbs was inclosed by the mass, and was quite well preserved in two or three small irregularities upon the surface of the retina, probably caused by the mass around the pigment. The process had evidently commenced before the retina was separated from the choroid, and when this took place masses of pigment remained attached to the retina at the diseased points.

"Around one of the masses of pigment, completely imbedded in one of the thickened portions of the retina, which exhibited the development more of cells than of fibres, were a considerable number of vessels which seemed to be newly formed. Distributed throughout a large portion of the retina, but especially in the inner layers, were large numbers of transparent elongated cells, with and without nuclei, which probably must be brought into connection with the formation of new vessels. In the anterior portion of the retina was a remarkably abundant development of easily isolable spindle-shaped cells, with very great prolongations. The pars ciliaris retinæ presented these also, together with abundance of cells with the appearance and arrangement of columnar epithelium. In the substance of the pars ciliaris retinæ itself was an abundant development of large spherical masses of nuclei or cells (endogenous cells), at times inclosed in a thick concentrically striated capsule. In the whole thickness of some of the inflamed portions of the retina, were scattered disk-shaped brilliant cells, with proportionably large round nuclei, similar to those observed in the choroid, but not so large. In the layer of nerve-fibres masses of cells were at times developed, so that at some points this layer had entirely lost its normal appearance. These cells were quite uniform in size, oval in form, and seemed inclined to be developed in layers, the long axis of the cell corresponding with the direction of the nerve-fibres, showing that they were not probably connected with the system of radial fibres. These cells often encroached on the layer of nerve-cells, but it was impossible to determine whether the latter had taken part in the process or not. The nerve-fibres themselves were often in a varicose state, the varicosities being very various in size and round, slightly oval, or spindle-shaped, and having a delicate finely granular condition. In these varicosities of the nerve-fibres I observed nothing like a nucleus."

K. *Ear.*—The affections of the ear which are found to be dependent upon inherited syphilis as a cause are usually nervous deafness due to an exudation into the nerve-sheath or else to a deposit of gummous material beneath the periosteum of the bony canal through which the auditory nerve passes. This deafness generally takes place some years after birth, and not immediately after, coming on gradually and too often proving obstinate to all methods of treatment which may be instituted. Cases of suppurative

otitis media are also seen associated with this type of disease, but it is open to some doubt if it is dependent directly upon the syphilis.

L. *Nervous System.*—The study of nervous affections of hereditary syphilis have lately received a marked impetus from the numerous cases which have been reported and include almost every variety of diseases of this portion of the body. One of the oldest forms which has been recognized and described is hydrocephalus. This may appear at the time of birth and often proves a serious obstacle to delivery. The head is enormously distended and gives the child trouble in holding it upright, producing in the infant a peculiar top-heavy appearance. In many of these cases the child is imbecile and subject to epileptic seizures which still further weaken the child's intellectual faculties. On section, besides the presence of a large amount of fluid in the membranes of the brain and ventricles, thickening and adhesions of the dura mater and the bones of the skull, cloudiness and thickening of the pia mater are observed. Associated with this condition deposits of gummous and granular material are found, following the course of the blood-vessels of the brain. This matter is a yellowish color and rapidly undergoes fatty and caseous degeneration. General paralysis is also seen in syphilitic infants as well as paralysis of special nerves, although this variety is not so common as in the acquired type of disease.

Another affection of the nervous system which is often assigned to other than the true cause is chorea. In syphilitic infants I am inclined to believe this symptom is not infrequent and may occur without any other nervous manifestations, or it may be associated with epileptic convulsions. In many cases the notched teeth, the physiognomy, the remains of an interstitial keratitis, or the deformity of the nose may attract the surgeon's attention to the proper cause of the trouble, but these symptoms are not always present, perhaps there may be nothing, and then the diagnosis becomes a matter of extreme difficulty. I am of the opinion that many of the so-called strumous affections of this and other tissues are really nothing else than unrecognized cases of hereditary syphilis.

Aphasia is another symptom which has been observed as resulting from hereditary syphilis. This may or may not be associated with other symptoms of the disease. An interesting case has been reported by Dowse of London in the *Lancet* of February, 1878, in which so many symptoms of inherited syphilis were present that I give a *résumé* of the case.

The subject was a girl, twelve years of age, who up to and inclusive of her fifth year showed no evident signs of syphilis. At that time she suffered from ozœna and ophthalmia. At ten years of age she had an attack of loss of consciousness, which lasted for four hours and was followed by an ulceration on the side of the nose which speedily destroyed a large portion of this organ. From this time on the nervous symptoms predom-

inated; she had successively cephalalgia, epileptiform attacks, diplopia, and swelling of the optic papillæ. There were also anosmia, anæsthesia of the left side of the face, paralysis of the right motor oculorum and of the left facial nerve associated during the last days of life with aphasia and paralysis (slight) of the right arm.

The autopsy showed adhesions of the dura mater to the parietal portion of the brain, gummata in the right superior parietal lobe and on the left side in the posterior parietal lobe. The arteries of the base of the brain were the seat of an endo-arteritis. The left trigeminal and facial nerves were thickened, swollen, and of a rosy color. The liver and kidneys, although consistent, were gelatinous and lardaceous.

M. *Teeth.*—Mr. Hutchinson of London was the first to direct the attention of the profession to this point in the diagnosis of hereditary syphilis. He considers the state of the permanent teeth, if the patient is of an age to show them, by far the most reliable amongst the objective symptoms. He writes: "Although the temporary teeth often, indeed usually, present some peculiarities in syphilitic children, of which a trained observer may avail himself, yet they show nothing which is pathognomonic, and nothing which I dare describe as worthy of general reliance. The central second incisors of the second set are the test teeth, and the surgeon not thoroughly conversant with the various and very common forms of dental malformation will avoid much risk of error if he restrict his attention to this pair. In syphilitic patients these teeth are usually short and narrow, with a broad vertical notch in their edges, and their corners rounded off. Horizontal notches or furrows are often seen, but they as a rule have nothing to do with syphilis. If the question be put, Are teeth of the type described pathognomonic of hereditary taint? I answer unreservedly, that when well characterized I believe they are. I have met with many cases in which the type in question was so slightly marked that it served only to suggest suspicion, and by no means to remove doubt, but I have never seen it well characterized without having reason to believe that the inference to which it pointed was well founded."

It must be carefully noted that it is the second and permanent set that Mr. Hutchinson considers as the test teeth and undoubtedly it is frequently a valuable symptom when conjoined with other symptoms, but it is doubtful if it be as positive of hereditary syphilis as Mr. Hutchinson considers it to be. At the present the truth of Mr. Hutchinson's law is questioned, and many observers openly deny its value as a pathognomonic sign. At a recent meeting of the American Dermatological Association, Dr. White of Boston related the case of a boy who presented the central incisors notched from side to side and the lateral incisors wanting where the suspicion of syphilis was excluded. The other teeth were normal. The deformity succeeded a sudden and severe attack of cervical adenopathy.

Of course, the absence of notched teeth in a child is no evidence, *per se*, that the child may not have syphilis. Syphilitic children do have sound teeth.

Mr. Hutchinson also speaks of an exfoliation of the deciduous teeth, notably the central incisor, which, however, is also seen in the permanent set.

N. *Alopecia.*—Mr. Barlow of London speaks of an alopecia which occurs in children the subjects of inherited syphilis, which may be either complete or localized to certain spots or portions of the head. In the latter case it occupies the fronto-parietal regions, showing itself in bands more or less extensive in the antero-posterior direction. It is seldom seen on the vertex, either frontal or occipital. In all cases the eyebrows are scanty, sometimes entirely wanting. This form of alopecia is sometimes attended by an epithelial pigmentation. Mercurial treatment will arrest the progress of the baldness but it will not renew the growth of the hair.

The seat and extent of the alopecia distinguish it from other forms of alopecia which occur in children.—F. R. S.]

CHAPTER II.

PROGRESS OF THE DISEASE.

Let us now examine infantile syphilis without reference to the lesions which it engenders and solely as regards its evolution.

The period at which each symptom usually appears has already been pointed out, and the reader is already familiar with the situation and relative frequency of each. Nothing more remains, then, but to study the affection in itself, in its first outbreak, its progress, its relapses separated by intermissions more or less complete and of longer or shorter duration, and in its most remote consequences. This will be the object of the following chapters.

I.—*Period of its Appearance.*

The first point to be determined is this: *May a child present at birth symptoms of constitutional syphilis?* Assuredly, if there be a problem easy to solve, and one upon which the most opposite theories may meet without clashing, it is the one I have just proposed. A mere question of fact, facts are sufficient to decide it, and they ought, as it appears to me, to have already placed it beyond doubt. Yet even on this point the most marked differences of opinion are still met with. This will be sufficiently proved by stating that, while Ricord[1] "denies that a child may be born with constitutional symptoms," Rosen[2] says "that he has never seen any children except such as were affected from birth."

I can well understand that critical observers should refuse to admit as proofs of syphilis, with Doublet, a steatomatous tumor at the canthus of the eye, or a chancrous ulcer on the fourchette; with Cullerier, cauliflower excresences; with Gilbert, a small fringed excrescence near the commissure of the vagina; or the *semi-coction* of Fallopius, or the premature senility of Faguer.[3] But there is no lack of well-authenticated cases in which symptoms were present at the time of birth having all the characters of the most distinct constitutional lesions. I have already quoted one incon-

[1] These are, at least, the words imputed to him in the Gaz. des Hôp., v., 1846, p. 13.

[2] Nils Rosen de Rosenstein, Mal. des Enf., p. 540.

[3] Thèse de Paris, 1783.

trovertible instance from Rondelet. Doublet [1] saw a child which was born with very distinct blackish pustules. Gilbert [2] speaks of a little boy "who presented at the time of birth flat pustules of a reddish-brown color, scattered over the back, buttocks, and thighs, and who died some days afterward." Another, observed by the same author, "presented at birth pustular spots on the buttocks and thighs:" his mother was the subject of intense periosteal pains.

Guerard [3] delivered a lady of a child "covered with yellow patches, which all who saw them recognized as syphilitic." Landman [4] has published the history of a child which the midwife observed to be born with copper-colored spots on the body and pustules on the *labia majora*. Sir A. Cooper states that "he has seen several children born with a copper-colored eruption, evidently syphilitic, on the palms of the hands, the soles of the feet, and the buttocks." [5]

But this is not all, as the syphilitic diathesis may have already produced, *in utero*, perfectly distinct external manifestations of its existence. If a child be born dead, and its body present traces indicative of syphilis, the appearance of these lesions must evidently have preceded birth, since their very development itself necessarily presumes vitality. And such instances are on record. Cullerier [6] mentions a still-born child which came into the world covered with venereal pustules. Deville [7] saw in a still-born child well-marked mucous patches, in great number, on various parts of the body. A woman, the patient of Simon,[8] had contracted venereal disease, and from that time, in each pregnancy, she was delivered, about the seventh or eighth month, of a dead child which bore evident marks of syphilis.

But however incontestable the fact of this mode of evolution may be, it is not the less exceptional. As a general rule, it is only after a certain period of apparent good health that the child begins to present signs of the diathesis communicated to it before birth. All writers are agreed on this point, and explain this incubation in the same manner. The more or less irritating effect of external agents and the incipient exercise of functions previously dormant constitute for the new-born child so many causes of evolution. These agencies may well be compared, in reference to the nature of their influence, to those which induce in the adult the more or less early outbreak of constitutional symptoms after the cicatrization of a primary chancre. They are not, as we have just seen, absolutely indispensable for the production of such symptoms, since the child, on coming into the world, sometimes presents the symptoms referred to. In point

[1] Essai sur la Mal. vénér. des nouv.-nés., Paris, November, 1781.
[2] Bertin, op. citat., pp. 100 and 101. [3] Journ. de Siebold, l. c.
[4] Ann. Méd. de la Flandre occidentale, March, 1852, p. 410.
[5] The Lancet, vol. iv., 1825. [6] See Bertin, op. citat., p. 99.
[7] Bouchut, op. citat., p. 859. [8] Journ. des Conn. Méd.-Chir., 1835, p. 257.

of fact, however, a certain number of days, at least, does almost always elapse between birth and the first constitutional manifestations.

What, then, may be taken as the mean term of the duration of this latent period. It is not a motive of simple curiosity which induces the practitioner to make this inquiry. He must ascertain the period in order that he may know at what age he is justified in reassuring the parents concerning the health of their child; until what age it is necessary to watch for the possible development of symptoms; with what reservations it may, at different periods, be intrusted to a nurse, and whether he must always wait for the outbreak of symptoms in the infant, before submitting the parents to an anti-syphilitic treatment for the sake of future conceptions, etc. In short, the determination of this question, without constituting a necessity of the first order, is at least one of the desiderata which the specialist most frequently feels in his connection with delicate family affairs.[1]

The testimony of authorities and that of facts, each consulted separately, both agree in an almost identical solution of this point. Thus:

Nisbet states that the symptoms appear a fortnight after birth.

Doublet has never seen the disease fail to break out in a week.

According to Babington (see Hunter's works), it is after a period which generally varies from three to five weeks that the health of the child begins to be affected.

If we are to believe Gilbert,[2] the eruption usually shows itself at the end of the first, or in the course of the second month after birth.

Trousseau and Lassègue,[3] fix the earliest limit at one week, the latest, and quite exceptional, at seven months. For the great majority of cases they place the outbreak of the symptoms between the first and third month.

Huguier[4] states that the symptoms of syphilis in infants most frequently appear from the third to the twenty-fifth day, or, as he very properly adds, even later.

Simon[5] says that it is from the eighth to the fifteenth day that the symptoms appear.

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[1] I may illustrate, by citing the error of a man of talent, how great is the necessity of having precise notions on this point. In a discussion concerning the contagiousness of syphilitic lesions in infants at the breast, Henriette, wishing to show that the foundlings of the Brussels Hospital are not apt to infect the nurses to whom they are given to nurse, says, "These children remain eleven full days before they leave the hospital. The germs of secondary syphilis would not continue thus for eleven days in the latent state without being even suspected." (Journ. de Méd., de Chir., et de Pharm. de Bruxelles, March, 1853, p. 317.) We shall see directly how fallacious would be the security based upon the consideration of a period of health so restricted as that with which Henriette is satisfied.

[2] Maladies de la Peau, p. 475.

[3] Arch. gén. de Méd., October number, 1847.

[4] Séance de l'Acad. de Méd., July 13, 1840.

[5] Journ. des Conn. Méd.-Chir., 1835.

According to Cristofori, of Bologna, they manifest themselves from the first to the third month; in scarcely any case before one month; in very few after three.

Mahon[1] writes: "These symptoms are generally observed from the fourth to the fifteenth day." Bouchut believes that, "the period at which symptoms of syphilis show themselves in a child which has inherited their germ is *almost constantly from the first to the second month* of extra-uterine life."

Bardinet states that they "develop themselves in general, during the second month, sometimes sooner, sometimes later, but without varying much from this period. He has never observed them at the time of birth, nor during the first two weeks after it.

Being anxious to throw upon the solution of this important question the valuable light of statistics, I have collected 158 observations in which the date of the first appearance of the symptoms has been carefully noted. Of these cases, 53 were collated by Rizzi;[2] 24 by Bertin; 22 by Bardinet; 5 by Cazenave; 2 by Egan; 2 by Bouchut; 1 by Mahon; 1 by P. Dubois; 2 by Cullerier; 1 by Galligo; 5 by Potton; 1 by Campbell; 3 by Vassal; 1 by Duchateau; 1 by Gilbert; 2 by Gauthier; 2 by Coles; 1 by Vidal; 1 by Troncin; 2 by Cussack; 1 by Trousseau; 2 by Putegnat; 5 by Lallemand; 5 by Doyon and Dron; 4 by Bassereau; 2 by Bergeret; 2 by Dubreuil; 1 by Hunter; 1 by Rayer; 1 by Boehr; 1 by Baumès; 1 by Semanas.

Without entering too minutely into details which would place us in danger of losing the fruits of this investigation, I shall simply group the figures between the chief limits. Thus, of these 158 cases, the disease showed itself:

Before the completion of one month after birth.....	in	86
Before the completion of two months.....	in	45
Before the completion of three months.....	in	15
At four months.....	in	7
At five months.....	in	1
At six months.....	in	1
At eight months.....	in	1
At one year.....	in	1
At two years.....	in	1

Thus 131 children out of 158 presented evident symptoms of syphilis before the end of the second month. This is the most practical result of this summary. And, on examining the cases in which still more exact information has been given by the authors, we learn that, of the 131 children,

[1] Mal. syph. des nouv.-nés, p. 409.

[2] Gazetta Médica di Milano, April, 1846.

110 had symptoms before the end of six weeks, and 86 before the end of the first month.

In a series of 105 cases in which the date has been the object of still more minute inquiry, it was found that 45 had undergone the first effects of the disease before the end of the thirtieth day after birth. Of these 45 subjects 24 were attacked before the fifteenth, and 10 before the eighth day.

My readers will easily find in this table the indications they require, and will not fail to remark: 1. That the greater proportion of outbreaks of constitutional syphilis in new-born children occur before the completion of the first month of their existence.[1] 2. That when the third month is once past, there is no longer much probability that any symptoms of this kind will manifest themselves.

II.—*Relation of the Progress of the Disease to its Particular Mode of Origin.*

A child born without any original taint accidentally contracts a primary chancre. It undergoes, in this case, the successive phases and the development of the diathesis, in exactly the same way as an adult who had received the infection by coitus. Like the latter, it may escape the diffusion of the poison in the organism and come off with only a local sore of some weeks' duration. If, on the contrary, the constitution become affected, it is observed that the periods which indicate the progress of the disease succeed each other a little more rapidly in it than in the adult; a circumstance sufficiently explained by the superior activity of the functions, especially of the circulation, at an age when growth gives to them all an impulse out of proportion to that which they will ultimately retain.

[When our author writes that the child "may escape the diffusion of the poison in the organism and come off with only a local sore of some weeks' duration," he is wrong. He is evidently confusing the local sore, the chancroid, with the initial lesion, the chancre of Ricord. The local sore is not syphilis, and therefore the child naturally escapes "the diffusion of the poison in the organism;" hence the elaborate explanation which he gives about "the superior activity of the functions," etc., is not necessary. —F. R. S.]

When, instead of a primary chancre, the disease in the new-born child results from contact with a *congenital lesion*, its general effects are pro-

[1] It had been my intention to give more precision to the language of these figures by ascertaining *the mean* of the period of incubation. I had, therefore, divided the total number of days by the total number of cases. But this result is entirely fallacious on account of the excessive influence which, in a calculation so drawn up, is exercised by a few very rare cases occurring at a long date. Thus it is only to show the errors to which such calculations lead that it is now stated that the mean duration would be forty-four days!

duced still more rapidly. In these cases, the interval which occurs between the deposition of the infectious matter and the appearance of the symptoms on other parts of the body is so short that, when these symptoms are themselves of a contagious nature, such as mucous tubercles, there seems reason to believe that they have been produced by the direct contact of the part on which they show themselves with the individual who has been the agent of contamination. But when it is a dry eruption, a roseola, which appears, we can no longer have recourse to this explanation; and we must then admit as the sole cause of its early appearance the extreme rapidity with which the germ, at first local, invades all the organic systems in the child.

When the disease, transmitted in this manner, passes successively from one individual to the other, is it true, as Colles[1] says, "*that a third child will be infected more quickly than the second, the fourth more quickly than the third, etc.?* Nothing in my observations has confirmed this opinion, a kind of hyperbole, as I believe, intended even by its author solely to exhibit in more striking colors the danger of endless transmission presented by the venereal affections of infants at the breast.

Is it true, as the same writer affirms, that the disease, when arising from a congenital source, and afterward communicated to several individuals in succession, gives rise to symptoms which are exactly similar in all? This peculiarity, which, according to him, is one of the best distinctive traits between syphilis acquired by chancre and that propagated by secondary congenital lesions, has only an appearance of truth. If it appear at first sight tenable, it is only because most of the constitutional symptoms in infants, developing themselves under similar structural conditions, assume forms and present a physiognomy which are almost identical.

Lastly, is it true, as asserted by Egan,[2] that if an adult have contracted the disease from an infant which was born with it, the ravages will be more serious in him, the affection more obstinate, and the relapses more frequent than if he had acquired it in the usual way? Nothing authorizes us to think so; and I believe that the undoubtedly greater capability of communication from individual to individual, in such cases, has erroneously been regarded as a greater severity of the disease in the adult. And, further, may not the insidious manner of its development, affording the patient neither data nor warning, often enable it to remain longer unrecognized and carry on its ravages with impunity? It appears only too reasonable to believe so.

But these distinctions between acquired congenital syphilis and syphilis from the diffusion of the chancre-poison are neither the most important nor the most difficult with which we have here to deal. Another much

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[1] Ranking's Abstract, p. 285.

[2] Dublin Quarterly Journal, 1846, p. 348.

more complicated question presents itself, when we pass on to the determination of the conditions of the evolution of *hereditary* syphilis, properly so called. I shall state it in these terms:

Does the evolution of symptoms in the infant differ according as it has received the germ of the disease by conception or during pregnancy; and, if it differ, in what does this difference consist?

The almost unanimous agreement of authors seems to furnish an affirmative solution of the first of these questions. Consult special treatises, question the men whom experience has rendered most competent, and you will find that all of them entertain the idea of a fundamental difference between the effects of syphilis, according as it is communicated to the embryo at the time of its formation or subsequently.

Several dogmatic writers have even distinguished these two varieties in their works by devoting special designations to each. Cazenave [1] calls the former *hereditary*, reserving the name of *congenital* for the latter. Mahon [2] "assumes that fœtuses born before the full time, with a dry and wrinkled skin, are those which have been infected in the very act of conception; and that those infected by the humors of the mother are often free from symptoms at the moment of birth." According to Fabre, J. L. Petit asserts that, "If the father or the mother have not contracted syphilis until after conception, it is certain that the child will be less affected than in the other cases, because the seed from which they have been formed not being corrupted, the germ of the disease cannot have taken such deep root." [3] Baumès writes: [4] "But it is especially when the germ of this horrible malady (congenital syphilis) is hereditary, that nutrition, the basis of all existence, is arrested, changed, vitiated at its source," etc.

I have been anxious to ascertain whether there is, in this general belief, anything more than one of those inductions which, in the natural sciences, so easily pass for truths simply because they are not improbable. But this investigation presented more than one difficulty. Could it bear upon the condition of children born of a mother infected before pregnancy? No; for here the influence of a vitiated oyum was conjoined with that of contaminated blood serving as an aliment for the fœtus, so that it would afterward have been impossible to assign to each of these two causes the part logically due to it. The hypothesis to be examined puts forward two facts: one, the great malignity of the diathesis in an infant infected by conception itself; the other, its comparative mildness in an infant infected only by the blood which it receives from its mother. It was necessary, therefore, for a correct estimate of its value, to confront these two categories of cases, confining ourselves, of course, as regards the former, to those in which the *influence of the father* was the sole cause. This

[1] Traité des Syph., p. 137.
[2] Mal. syph. des nouv.-nés, p. 407.
[3] Traité des Mal. véner., p. 141.
[4] Op. citat., vol. i., p. 173.

double successive enumeration will no doubt appear fastidious; but the object was to substitute reality for probabilities, and it will easily be understood that, to obtain this result, facts rather than theoretical presumptions were required.

1st Series, *showing the evolution of syphilis in children who receive it from the father only.*

Boehr's Case.—The father had been treated constitutionally. The child continued healthy for three weeks; it was then attacked by corroding ulcers which increased rapidly, by coryza, and copper-colored spots. These symptoms made fearful progress, until mercury was administered, which arrested them, but the child had subsequently two relapses.

Swediaur's Case.—The father had undergone treatment. At the end of some weeks the child had a syphilitic ulcer in the throat, of which it recovered.

Guérard's Case.—The father had undergone treatment. The child came into the world covered with dull yellowish spots, and with ulcers on the fingers and toes. It was cured by the prompt administration of mercury.

Bassereau's Case.—The father had undergone treatment. On the third day, the child had copper-colored spots over the whole body; on the fourth, intense coryza. It died on the fifteenth day.

Troncin's Case.—The father had been only partially treated. The child was born healthy. At the age of three weeks it was attacked by a well-marked syphilitic pustular eruption, and died at eleven months.

Haase's Case.—No information as to the treatment of the father. The child was born with imperfect development and senile physiognomy, and separations of the epidermis in the palmar and plantar regions. Immense ulcers covered the buttocks, and appeared in the throat, mouth, and nostrils. It died on the twentieth day.

Albers' Case.—No information as to the treatment of the father. The child presented, a few days after birth, several pustules which assumed a manifestly syphilitic character. It died on the ninth day.

Depaul's Case (second).—The father had not undergone any treatment. The child died after having breathed twenty minutes. Both lungs as well as the thymus gland, presented collections of pus. A pemphigoid eruption covered the palms of the hands and the soles of the feet.

Observ. of Bertin.—The father had not undergone any treatment. At the end of six weeks the child had fissures about the mouth, then ulcerating pustules on the buttocks. It was cured by a mercurial treatment of five weeks' duration.

Observ. of Bertherand.—The father had not undergone any treatment. The child was born at eight months with general pemphigus, it cried incessantly, its features rapidly became changed, it refused the breast, and appeared to be about to die. Fortunately corrosive sublimate was given from the sixth day, and it recovered.

2d Series. Let us furnish at once, with the appropriate details, *the history of mothers who, only infected during pregnancy, have given birth to syphilitic children.*

Gilbert's Case.—The mother had undergone a treatment of sixty days' duration in the venereal hospital of Paris. The child, born at seven months, had, at the end of a month, large, moist tubercular pustules on the scrotum and about the anus. It infected the nurse.

Bertin's Case (second).—The mother had undergone a very long treatment with Van Swieten's solution. The child, born very feeble, had, at three weeks, ulcerating pustules on the buttocks.

Baumès' Case.—The mother had undergone treatment by Van Swieten's solution and sudorifics. The child, born healthy, had, on the eighteenth day, ecthyma on the buttocks, chest, and cheeks. It was cured by mercury, after having infected its nurse.

Dubois' Case.—The mother had been but very imperfectly treated. The child, born prematurely, was lively and well developed; but it bore the first indications of pemphigus, under which it sank on the eighth day.

J. Starck's Case.—No information as to the treatment of the mother. The child, born at the full time and healthy, had afterward an ulcer on the *velum palati*, and copper-colored spots on various parts of the body. Nevertheless, its health continued intact until the fifth month, at which date it was seen by the author for the first time. It was cured by mercury.

Depaul's Case.—The mother had not undergone any treatment. The child, born at eight months, sank on the fifteenth day, in spite of the employment of mercury, under syphilitic affections of the skin and lungs. The eruption had appeared two days after birth.

Bertin's Case (first).—The mother had not undergone any treatment. The child was born dead at six months.

Bertin's Case (third).—The mother had not undergone any treatment. She miscarried at four months and a half.

Michon's Case.—The mother had probably not undergone any treatment. The child, born at seven months, lived only three days. It presented at birth mucous patches and reddish brown, copper-colored pustules on the legs and arms, ulcers on the *labia minora*, and onychia on all the fingers and toes.

The reader has now all the evidence before him. This double series shows him infantile syphilis, first, according to authors, in its most serious etiogical conditions; secondly, in the origin which they regard as the most innocent. He may, by weighing the circumstances and calculating the effect of treatment, whether upon the father or the mother on the one part, or upon the child on the other, draw from this parallel his own conclusion. For myself I am satisfied with having facilitated his decision, and have no wish to urge my own.

If it were necessary, however, to express the opinion which I have formed from the careful comparison of these two series of cases, I should be inclined to conclude:

I. That, in respect to absolute *gravity*, they offer an equality which could scarcely be more perfect, since that of the father gives five deaths in the children out of ten cases, that of the mothers four out of nine.

II. That, as regards the *lapse of time* between birth and the first outbreak of the symptoms, the similarity is also nearly perfect. The affections at birth, the incubations of two to three and four days and those of three

weeks, are observed, in fact, in almost the same proportion, in the one as in the other category. Yet cases of syphilis evident at birth are sensibly more numerous in children contaminated by the father.

III. That, as regards the *nature* of the symptoms judged of by their aspect, the resemblance is as exact as possible. Ulcers, copper-colored spots, mucous patches, pustules, and pemphigus, are met with in one set of cases as in the other. It is to be remarked, however, that abortion or premature delivery is more common in the cases of the second class, in which out of eight cases the child was born at the full term in three only; while the ten cases of the first class present only one miscarriage at eight months. It would seem that syphilitic infection, supervening in the course of pregnancy, causes a more dangerous derangement in the fœtus because it is sudden; and that it is better borne, on the contrary, when the embryo has been, from the first, accustomed to its influence. There would be, as regards prognosis, the same difference, in respect to their gravity, between these two varieties which exists between an acute, intercurrent disease, and a diathesis which develops itself with the individual and weakens him by degrees, but does not kill him suddenly.

IV. That the two kinds of cases equally show the power of mercury to mitigate the affection in the children, when it has been administered to the parents between the date of infection and that of conception or of birth. In each series, we *see*, so to speak, syphilis become more and more severe, according as we pass from the cases treated with mercury to those in which it was given in insufficient doses, and then to those in which it was omitted entirely.

To sum up, I do not wish to deny that the symptoms may not have been a little more early, the derangements a little more severe, and their evolution a little more rapid in the children of the first class. But with two series, realizing as these do, if we accept the laws assumed by the authors, the two extremes in respect to gravity, can we expect so slight, so imperceptible a difference? Taking, on the one hand, the cases which they represent as pathogenetically always very serious—on the other hand, those which they announce as constantly mild—ought we to expect that their analogies would be more striking than their differences? The inference to be drawn from this comparison is, if I mistake not, the formal negation of all that has been advanced concerning the great difference of infantile syphilis in connection with the diversity of its sources.

Moreover, these *à priori* conclusions, the want of solidity of which I have just demonstrated, do not agree, even theoretically, with our ideas of the power of syphilis as observed under conditions which explain the variations of its intensity. If at the time of conception the diathesis in the parents was *active* and not *latent;* if it had not previously been combated by mercury; if it was in all the energy of the secondary period; if the child have a lymphatic temperament, or if it present a great resemblance to its

infected parent; then the disease will no doubt be more violent than it would be under opposite conditions. It is upon these elements, and not upon others, that the prognosis ought to be founded; but, unfortunately the generality of recorded cases are not sufficiently detailed to enable us to bring these influences strictly into account, and to prove statistically the part played by each of them. It can only be presumed that the reason for the difference of severity in certain cases of congenital syphilis is to be referred to these circumstances rather than to the establishment of the diathesis in the parents before or after fecundation. I will endeavor, however, to determine this point more precisely.

III.—*Relation of the Progress of the Disease to the Period of the Diathesis in the Parents at the time of Transmission.*

Ricord for a long time asserted most explicitly[1] that "tertiary lesions are not susceptible of being transmitted hereditarily, with the specific characters of syphilis, like those which are secondary." But for some years past his convictions in this matter seem to have been on the point of modification by new observations.

"Ricord," wrote Gubler[2] in 1852, "is on the track of a new class of facts tending to demonstrate that individuals affected with tertiary symptoms may transmit them directly to their children." Bassereau,[3] who adopts Ricord's views on all these points, asserts that "new-born children affected with hereditary syphilis always present symptoms of the same kind as those existing in the parents at the moment of fecundation." We may discuss this interesting question, then, without finding ourselves at the outset opposed to the most eminent writer on syphilis of our time.

This proposition, stated in such plain terms by Bassereau, presents nothing repugnant to reason. But a very serious difficulty interferes with its verification by experience. Tertiary affections do not manifest themselves in such marked forms in children as in adults. Affections of the bones, for instance, are so rare in the former that the annals of medicine scarcely offer five or six well-authenticated examples of caries or periostitis. Subcutaneous tubercles are less infrequent phenomena; but with the exception of the two cases mentioned by Bassereau, they have not been described with sufficient exactitude to enable us clearly to distinguish them. With respect to ecthyma, it is not nearly so rare, but every one knows that it is a lesion intermediate between the two periods rather than one appertaining strictly to the tertiary period.

[So far from affections of the bones being rare in syphilitic children, the annals of medicine now offer hundreds of cases of well-attested disease

[1] Rech. crit. et expér. sur l'Inocul., 1838, p. 160 (note).
[2] Gaz. Méd. de Paris, 1852, p. 292.
[3] Op. cit., p. 540.

of these parts. Not only are the long bones attacked, but the flat bones also participate in the disease. Indeed, it may be said that no portion of the osseous framework in children is exempt from this cruel disease.—F. R. S.]

There remain, then, the affections of the viscera, the thymus gland, the lungs, and the liver. But is it quite logical to rank them, like their analogues in the adult, in the tertiary phase? They affect, it is true, the same organs. But is their nature the same? I think not. In the adult, the affection consists essentially in tubercles, which are at first hard and crude, and do not soften until a much later period. These tubercles occur in the heart, the brain, the muscles, and the subcutaneous cellular tissue, as well as in the lungs and liver. They do not supervene until after the succession of a great number of superficial syphilitic manifestations. In the new-born child nothing similar occurs. In them the engorged point results, not from a tubercle deposited between the meshes of the normal tissue, but from a simple congestion of that tissue itself. No sooner is this nodule formed than it begins to suppurate. The seat of these lesions is exclusively in the organs to which extra-uterine life imparts new functions. In short, they appear very seldom indeed as the ultimate expression of a diathesis which has reached its highest point. These cases are, on the contrary, remarkable for the absence of the profound lesions which, in the adult, are the almost necessary accompaniments of visceral tubercles, and that to such an extent that this absence of concomitant signs has led some to doubt altogether the syphilitic character of the visceral lesions of new-born children.

[To these should be added the affections of the heart, the kidneys, the spleen, the intestines, the eye, the ear, and the nervous system. Exception may fairly be taken to the statement advanced that "these cases, are . . . remarkable for the absence of the profound lesions which in the adult are the almost necessary accompaniments of visceral tubercles," since in children oftener than in adults are seen the degeneration and breaking down of tissue associated with the late, or, as our author styles it, the tertiary stage of syphilis. It is just that degenerative tendency which makes infantile syphilis so dangerous and fatal.—F. R. S.]

Whatever may be, in other respects, the proper place of these lesions in the chronology of syphilis, it none the less results from what has just been stated that tertiary symptoms are rare in new-born children; and, further, that the semeiological diagnosis of them is subject to controversy. Thus it becomes necessary to multiply the means of control offered by experience, and to examine two distinct classes of facts, to know—1. Whether children, the acknowledged subjects of symptoms assumed to be tertiary, had as parents individuals who had, at the moment of transmitting the disease, reached the tertiary period. 2. Whether parents, the acknowledged subjects of tertiary symptoms at the same period (a thing much more

common and easy of determination), have produced children presenting symptoms which could be classed in the same category.

As regards the first question, Bassereau[1] has quoted two cases, of which the first appears entirely conclusive.

A man married and had, in September, 1840, in April, 1845, and in January, 1849, three children. The first presented only coryza and copper-colored papulæ. The second had small subcutaneous tubercles, especially on the lower extremities, which terminated in ulceration. It was cured by the administration of iodide of potassium to the nurse. The third had, on the thirtieth day, a group of large corroding syphilitic tubercles on the posterior surface of the left fore-arm. It perished, the nurse having refused to take the iodine. But the father of these children, attacked by chancres in August, 1839, had had successively, mucous patches on the tonsils, in March, 1840 ; a group of dry tubercles on the deltoid, in the spring of 1845 ; and an exostosis on the right tibia, in the month of November of the same year. His wife did not contract any disease.

Bassereau saw, with Ricord, two children born of the same parents, with an interval of four years. The first, begotten at a time when the father had just been submitted to mercurial treatment for recent syphilis, presented no symptom except syphilitic erythema, under which it sank in a month. The second was attacked by large tubercles, at the mastoid apophysis, near the superior spine of the ilium, and at other points, which ulcerated. This child recovered. But Bassereau does not state, in this case, what had been the succession of symptoms in the father, nor even whether he had had any peculiar to the tertiary period, an omission which deprives the case of all its value.

As regards ecthyma, Beaumès quotes the case of a child which had, eighteen days after birth, numerous pustules of ecthyma which terminated in circular ulcers. But the infection of the father and the mother dated from the seventh month of pregnancy only. The father had not had any constitutional symptom ; the mother nothing but copper-colored papulæ on the forehead and ulceration of the tonsils. Certainly the want of relation here between the marked tertiary eruption in the child, and the superficial and so recent affection in the mother is very striking.

If suppuration of the lung were to be regarded as tertiary, its etiology would not go to confirm this law ; for in one of the cases of this kind observed by Depaul the infection proceeded from the father, who had contracted the disease only two months before his wife became pregnant, and is specially described as having had at that time *none but secondary symptoms.* In the other case, the disease proceeded from the mother, who had contracted it at the end of the second month of pregnancy, and presented, at the time of delivery, no other syphilitic phenomena than mucous patches in the vulva.

Could pemphigus, then, be accepted as a tertiary symptom? Here again instances of children conceived while their parents were in the secondary phase would not be wanting. P. Dubois has seen fatal pemphigus

[1] Op. cit., p. 541.

following infection which proceeded from the mother only, and that not until the fifth month of pregnancy. Galligo has also seen it transmitted to a child by a mother who had secondary symptoms only. Bertherand has seen general pemphigus in a new-born infant whose father, alone infected, had had no other syphilitic symptom than an *eruption of small pimples*, which was cured by a moderate quantity of Laffecteur's syrup.

Lastly, Depaul's first case shows also the existence of suppuration in the thymus gland, although the infection of the mother was quite recent, and had certainly not passed the secondary period.

Let us now enter upon the second question: *The parents being manifestly in the tertiary period, what symptoms will their child present?* I confess that I have met with only a very limited number of facts bearing upon this point. Here is first a conclusive one in favor of the relation between the symptoms in the parents and those in the children:

A man infected beyond hope of cure [1] married a girl who consented to this marriage, saying that with the money which he brought her she should have the means of getting cured. The young woman was delivered of a child covered with ulcers, from which it never became entirely free until sixteen years of age. The mother sank, some months after delivery, under the sequelæ of venereal disease.

That fact was affirmative. Here is a negative one. But let us first call to mind that, although very few in number, the latter have much more weight to disprove the law than the former to confirm it; for, with regard to these, it may be alleged with reason that the resemblance between the symptoms of the father and those of the child may be the result of chance, and does not absolutely involve a physiological necessity.

Madame V., attacked by secondary syphilis [2] characterized by crusted pustules on the whole body, and periosteal pains which deprived her of sleep, was treated for these affections from the commencement of the seventh month of pregnancy. She was delivered of a weakly emaciated child, which presented at birth pustular spots on the thighs and buttocks.

In conclusion, I have no hesitation in confessing that statistics furnish as yet only insufficient elements for the solution of this question. It is, therefore, a point still at issue, and it would be premature to attempt to surmise the manner in which the future will decide it. One consideration strikes me, however; and I draw it from experience, and from experience

[1] Rosen, Mal. dés Enf., p. 540.

[2] Bertin, op. citat., p. 101. Let it not be said that the effect of the treatment had diminished the influence of the disease upon the child. It might render the symptoms less severe in it, but could not substitute secondary for tertiary symptoms. For, as Bassereau remarks, if his law be exact, the child conceived by a tertiary parent is necessarily exempt at birth from the secondary symptoms through which that parent has passed.

most freely consulted. On examining the cases in which syphilitic parents have had many children in succession, we remark that, even in the absence of any general treatment, the disease affected the earliest most severely, and became ameliorated afterward in proportion as its victims were multiplied. In the first pregnancy abortion occurs at five months ; in the second at a later period. The result of the third is a child at the full term, but weakly and not viable ; the fourth child is born with a constitution more capable of resistance. In a similar manner, as regards the severity of the lesions, the symptoms appear earlier and are more serious in a first child, become gradually less severe in the children which follow, and affect the latest born only by comparatively slight and tardy attacks.[1]

But what does this habitual decrease imply except the instability of the hypothesis which I have just been examining? Of course I do not wish to call all syphilis of long standing *tertiary;* for I am well aware that in many individuals secondary symptoms are reproduced, and perpetuated in the same form, without ever vacating the field in favor of deeper changes. But in the end, with the exception of such cases, when the diathesis continues for several years, when it endures without becoming extinguished, then doubtless it is seen to pass to its third period. Then it is, therefore, that it ought, if the hypothesis were exact, to produce in children derangements more and more similar to the lesions characteristic of this period. Yet the contrary occurs! The prognostications of this theory are not fulfilled, since, instead of the progressive aggravation predicted by it, we observe, on the contrary, a gradual diminution of the diathetic impression on the progeny. What is to be inferred from this? At the least, that the observations which appear to confirm the theory are neither sufficiently numerous, nor sufficiently precise to outweigh the considerations which authorize a different solution.

IV.—*On Retarded or Masked Congenital Syphilis.*

I have, a little while back, in accordance with the best authorities, fixed at three months the most usual term, at six months the latest term, at which the child pays by specific symptoms the debt contracted in its mother's womb. But the question has not been solved in this manner by all. Some admit a form of congenital syphilis remaining latent during a great number of years, and bursting forth only at adult age. Others believe that the venereal poison, transmitted hereditarily, may, by combining with certain diatheses, produce in the constitution diseases complex and obscure, but real—certain forms of scrofula, for example, or a peculiar kind of debility. Hence arise two distinct questions :

[1] These remarks will be amply justified by numerous observations in the third part of this work.

A. *May hereditary syphilis fail to produce its first symptoms until several years after birth?* If we were treating only of manifestations somewhat retarded, there would be no doubt about this possibility. The table given above shows two cases of syphilis manifested only after one and two years respectively. Bertin[1] mentioned a child born of an infected mother, which presented no symptoms of syphilis until after it had been weaned. Bardinet also relates a case in which the evolution occurred at the fifteenth month. But these are only apparent exceptions; every disease having a fixed period of evolution furnishes cases of this kind; nor could it be otherwise, unless it be assumed that, a morbid cause being given, all possible organisms, under the influence of every imaginable circumstance, undergo and will manifest its effects in precisely the same manner.

But, in the hypothesis which I am analyzing, it is no longer the greater or less extension of the period of incubation which is at issue. The limit is not protracted; it is actually carried from one extremity to the other. The suspicion of this diathesis is not confined to infancy; even mature age is involved in it. I have employed the word *suspicion;* but, for such cases, it would be an absurdity. For, from the moment that the idea of hereditary syphilis remaining latent until the age of twenty or thirty was adopted, this dogma might evidently serve as a cloak for all delinquents. Sons would then exculpate themselves without ceremony at the expense of their fathers; and, Voltaire's fable becoming true, all the women who happened to infect their husbands would excuse themselves by answering, as was done to poor Dr. Sidrac, that "it was a family disease in them." Raillery apart, the social and moral consequences of such a doctrine are evident enough.

Ricord, so far as I know, has nowhere expressed a very positive opinion concerning this hypothesis,[2] the reason for which I can easily understand. Too enlightened to have overlooked the facts which appear to support it, he is too sagacious to have concealed from himself the objections to which they are all liable. He contents himself with communicating to his pupils the examples which appear to him susceptible of such an explanation, for the purpose of stimulating them to analogous researches. For it is only after very numerous observations that he can and will promulgate the *law,* of which the *outline* only yet exists in his mind.

I can understand his reserve, and I adopt it as my rule of conduct. As all the cases of this kind are liable to be contested, we must wait until

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[1] Op. cit., p. 153.

[2] We find, nevertheless, in the minutes of the Academy of Medicine (sitting of October 8, 1853), these indications summarily enounced by Ricord in the course of the discussion. "I have," he says, "a young man of seventeen under my care at present, in whom tertiary syphilis, acquired from his parents, did not make its appearance until this age. I have seen subjects in whom hereditary syphilis did not manifest itself before the age of forty."

their number compensates for their vagueness; we must know how to temporize until, emanating from the most varied sources, and collated under the most incontestible conditions of veracity and morality, they abound, extinguish our just hesitation, and overcome the opposition of the cautious law-givers of science.

It is only, then, for the purpose of contributing to this end, and without expressing either adhesion or dissent, that I present here such facts as are available for the elucidation of this question.

Many of the earlier writers, as Bern, Tomitano, Hunter, Bell, and in our day Baumès and Cazenave, admit general syphilis at the first onset, *i.e.*, constitutional symptoms breaking out in an individual who has not previously had any local lesion by which the contagion could have penetrated from without. But, as regards these facts, we have had hitherto only two modes of proceeding. The positive school denies them, and maintains that the patients have overlooked or concealed the local lesion which has served as an inlet for the poison. But when men such as those just named believe in the existence of general syphilis at the first onset (vérole d'emblée), is it allowable to affirm that they have always been deceived; that no one of them has been able sufficiently to refresh the memory or to recognize the duplicity of any of his patients to arrive at the true cause?

With the theory of retarded congenital syphilis this difference of opinion would cease. From the moment at which we could accept the real fact of these observations, while rejecting altogether the interpretation of it, a man in full health presenting symptoms of syphilis, without any antecedent primary lesion, would then be an example of hereditary transmission with prolonged incubation. The infrequency of these cases would be a further argument in favor of the explanation which I propose; for so long an incubation of the congenital poison must evidently be a very rare exception; and reason would here accord with experience, the one to foresee, the other to establish the rarity of such facts.

Cases of this kind are all more or less subject to doubt. This is no reason, however, for leaving them unnoticed. Without taking into account those, yet unpublished, which Ricord possesses, and which will undergo the most valuable scrutiny from his perspicacity, I will enumerate some such.

Nicholas Massa mentions three children, one three years old, another six, and the third eleven, whom he has seen affected with the "French disease." It has already been stated, in the historical notice, what the real value of these facts appears to be.

Balling[1] states that he was consulted about a youth of sixteen, the subject of an ulcer in the throat, of syphilitic appearance, and of caries of

[1] Ueber angeborene und ererbte Syphilis, l. c., p. 129.

the bones of the nose. This youth appeared to be very innocent, and in spite of all kinds of questions and a most careful examination, no personal source of this infection could be found in him. The father confessed that about the time when he begot him he had himself symptoms of constitutional syphilis. The youth was cured by the administration of anti-syphilitic remedies.

Albers[1] probably witnessed similar cases; for he says that in such the constitutional symptoms show themselves in the child at the age of two or three years; he even specifies that this retarded syphilis affects chiefly children born of a syphilitic father and a scrofulous mother.

Bell teaches positively that hereditary syphilis may remain latent in the child until the period of puberty, or in the adolescent until the time of marriage or of confinement, circumstances which he regards as a sort of crisis or change, capable of inducing the appearance of these symptoms.

Prieur ("Thesis," p. 30) says, "The treatment of the parents before and during pregnancy may prevent the constitutional affections from appearing in the new-born child; but they may afterward show themselves thirty years after birth without the child's having ever had primary lesions."

Friedländer is so persuaded of the reality of this form of disease that he reserves the name of hereditary syphilis exclusively for that "which does not manifest itself until several years after birth, about the age of puberty."

Dr. Gilbert[2] has published the following observation in support of the theory we are now examining:

A washerwoman of Orleans, of bad constitution, but tolerably healthy up to that period, married in 1824. She was delivered at the full time of a male child, which wasted rapidly, and sank on the seventeenth day, with small white pimples around the nails. At the end of a year she had a second child, now more than two years old and healthy.

A short time after having weaned it, she observed three swellings develop themselves upon her own body, one on the left clavicle, the second at the inner edge of the right sterno-cleido-mastoideus muscle, and the third near the elbow on the same side. The first soon suppurated, and the orifice was converted into a large ulceration.

This woman, when the disease had existed five months, came into the hospital. At the spot indicated, an ulcer with red, abrupt edges, and a grayish base, was observed. She had, further, a painful node on the left tibia. No trace of primary venereal affection could be discovered on the genital organs of this woman. She asserted that she had never had connection with any one but her husband, who, by his own account, had never had syphilis before marriage, and had always been healthy since. But she knew that her father had several times communicated the venereal disease to her mother, and that the latter had been suffering from it when she her-

[1] Ueber Erkenntniss und Kur der Syphilis.

[2] Journ. univ. des Sciences médic., t. lv., p. 100.

self was born. Mercurial treatment rapidly effected the cure of the ulcer.

We find also in Rosen [1] the case of a young girl of eleven, fresh as a rose, in whom hereditary syphilis manifested itself in the form of swelling and suppuration of the glands of the neck and of the nose, of caries of the palate, and of corroding ulcers of the face.

The work of Cazenave [2] on syphilitic affections contains two cases of disease called by him *hereditary syphilis*, occurring in two girls, one of nine years old, the other of eighteen, in the latter of whom the symptoms had first shown themselves at the age of ten. They had tubercular and serpiginous eruptions, which had produced serious effects. It was impossible to discover any trace of primary lesions, the existence of which was moreover rendered very improbable by the age at which the secondary phenomena had appeared. The first was cured by the administration of protoiodide of mercury.

Trousseau has related the history of a young girl of nineteen, in whom he himself observed, in 1826, a chancre in the posterior part of the throat. She had had, at six years of age, exostoses on the legs, and during the six following years nocturnal pains, which did not cease until the appearance of the menses, and returned afterward. There was probably, says Trousseau, hereditary or acquired syphilis at the moment of her birth. These symptoms were cured by anti-syphilitic treatment.

Sperino [3] saw a child born of a mother who died of syphilis; this child, previously healthy, though puny and scrofulous, was attacked by ulceration of the palate at the age of eleven years. Treated only with antiphlogistic and anti-scrofulous remedies, the ulcer continued to extend, and after having destroyed the soft palate, it perforated the hard palate. These changes had required two years for their completion. When Sperino saw this child, at the age of thirteen, it was pale, emaciated, had purulent expectoration, almost incessant cough, and fever, with evening exacerbations. He believed at first in the existence of pulmonary tubercles, but auscultation showed that none existed. The syphilitic character of the lesion having been diagnosed, syphilization was commenced. But in spite of the evident amelioration which ensued, fresh ulcers having appeared in the throat after four months of this treatment, recourse was had to iodide of potassium, which, given to the extent of 630 grains, completed the cure.

To be as conclusive as possible, facts of this kind must fulfil three conditions, which I earnestly recommend future observers to bear in mind. 1. The absence of local venereal antecedents in the subjects must be ascertained by a careful examination. 2. The nature of the existing lesions must be shown to be syphilitic, whether by the opinion of competent authorities, or by the curative effect of specific treatment. 3. It must be known, lastly, whether the parents, at the moment of fecundation, were in a condition to transmit syphilis.

It must not be overlooked that, without on that account advancing them as fully conclusive, this triple condition has been fulfilled in some of the observations which have just been quoted.

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[1] Malad. des Enf., p. 843. [2] Op. cit., p. 542.

[3] La sifilizzazione studiata qual mezzo, etc., 1853, p. 454.

B. *Can hereditary syphilis manifest its action by morbid effects other than the characteristic symptoms of venereal disease?* This question has already been considered in connection with pemphigus; and this might be done in reference to almost all the diseases of infancy, for there are very few in the etiology of which syphilis has not been accused of playing a more or less direct part. Doublet attributed to it the induration of the cellular tissue; Astruc, rickets and tabes; Bertin, certain kinds of tetter; Pitschaft, obstinate sleeplessness; Campbell, convulsions; Haase, hemicrania and hydrocephalus; Lamauve, acidity, apoplexy, and worms; Levret, the dropsies of early age. Lastly, I will complete this list worthily by recalling to mind that Sanchez saw the results of the venereal poison in imperforate anus, hypospadias, and even in the green color of the excrements of new-born children!!!

Fortunately, we are now no longer called upon to discuss the legitimacy of these different connections. We know, indeed, that the venereal *dyscrasis* never attacks an individual, *à fortiori* an infant, without imparting to its constitution a debility which predisposes it to all kinds of organic or functional affection. Acute diseases occur more readily in it and are more severe; catarrhal fluxes more persistent; diathesis more deeply rooted. But to say that, without having presented a single specific symptom—a mucous patch, or an ulcer—the new-born child may, through the agency of syphilis, be attacked directly by neuroses, pneumonia, or enteritis, is to forget at once the lessons of experience and the laws of analogy.

Some of these opinions have, however, been expressed more explicitly, and call for separate mention on account of the high patronage granted to them. We find, for example, in special treatises, the most general agreement to rank among the effects of the venereal poison a chain of symptoms which offer points of close resemblance to scrofulous affections.

Thus Troncin [1] had observed that if a child born of syphilitic parents does not die in coming into the world, it will afterward have glandular swellings, a large and tympanitic abdomen, and tardy dentition; it will be more liable to rickets, phthisis, and white swelling. If, by careful management, they reach the age of fourteen or eighteen, the complexion becomes pale and the upper lip tumid. Puberty often frees the females from this condition, but it may reappear after pregnancy. Troncin adds, "The child born of such a mother will be pale and emaciated; will have difficult dentition, begin to walk late, and be liable to rickets. . . ."

Mahon, Bertin, and those who have written after them, also do not hesitate to attribute the scrofulous affections of children to the consequences of syphilis in the parents.

Hufeland believes positively in the power of syphilis to produce scrofula in children.

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[1] De l'Extinct. de la Mal. vénér., p. 64.

Hey and Rosen have observed that, of the same parents affected with syphilis, at one time scrofulous at another syphilitic children are born.

According to Haase, if the children procreated under these conditions are not *manifestly syphilitic*, they are frequently affected with lymphatic tumors and glandular swellings.

Albers sums up in the following expressive terms his observations of the evolution of the disease in children born of syphilitic parents: "Glandulæ axiliares et inguinales tumebant, et habitus scrofulosus sensim se confirmavit." He adds, it is true, this pretended sign which one regrets to find following the above: "Ejus modi adolescentes erectiones tantum experiuntur leves."

Baumès says that "hereditary syphilis tends to impart to the economy a lymphatic or scrofulous bias . . . to produce in the body the tubercular degeneration which so often shows itself in scrofulous subjects."

But several questions arise here: *In the first place, is there in the parents a certain form of lesion, a certain period of the diathesis, which may more especially give rise to scrofula in their children?* Ricord does not hesitate to point out the tertiary stage as the most active cause of this transmission. According to him, the affections of this phase may produce similar, *i.e.*, tertiary affections in the child. But yet "their specific influence upon the offspring," he writes in the most of his recent works,[1] "appears to go on decreasing until it becomes, at last, only one of the hereditary causes of scrofulous affections."

According to him, therefore, it is not only tertiary lesions, but tertiary lesions *of long standing* which are the usual cause of scrofulous affections among the children of parents in that stage.

Baumès[2] has brought clinical elements of the highest importance to the solution of this problem. The following is the sum of his observations:

Madame B——, a widow, with a sanguine temperament, married a husband with a lymphatico-sanguine temperament. He contracted, while still unmarried, a syphilis which, being badly treated, continued and produced from time to time symptoms in the skin, throat, and especially in the osseous system. Five children were born of this marriage. The first, which was lymphatic, had venereal pustules and ulcers, and sank, about the time of the first dentition, under acute hydrocephalus.

The second, of very sanguine temperament, had, in infancy, a swelling of some of the phalanges of the fingers and toes. She was cured by corrosive sublimate, followed by the use of the waters of Aix, and is now in good health.

The third, highly lymphatic and very delicate, had amenorrhœa, then attacks of hæmoptysis at the age of fourteen; at the present moment she is in the third stage of pulmonary phthisis.

The fourth, a boy, lymphatic, had first moist pustules about the anus.

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[1] Lettres sur la Syphilis, p. 249.

[2] Précis théor. et prat. des Mal. vénér., t. i., p. 178.

At five years of age he was attacked by white swelling and caries of the knee, and died soon after amputation had been performed.

The youngest, very lymphatic, had, at an early age, swellings and caries in various parts of the body, especially of the elbow and the malar bone.

Madame D——, a widow, sanguine and robust, married a lymphatic husband, who, after a chancre contracted ten months before marriage, continued to have periosteal pains and a syphilitic eruption on the forehead and hairy scalp, which symptoms disappeared and reappeared at intervals. He married in this condition, which continued for nearly eight years, at the end of which time he died of chronic pneumonia.

A first daughter presented the temperament, constitution, and features of the mother. With the exception of some eruptions on the face and hairy scalp, in early infancy, she has always been healthy, and is at present married.

A second daughter, who presented, on the contrary, the temperament, constitution, and features of the father, had, when some months old, severe ophthalmia, then a discharge from both ears, with enlargement of the cervical glands. There afterward appeared copper-colored patches on the arms and legs, and a pustular eruption on the forehead. After an adolescence marked by acute hydrocephalus, palpitations, lateral curvature of the spine, and dysmenorrhœa, she died of pulmonary phthisis, at the age of fifteen.

These observations, entirely confirmative of those of Hey and Rosen, show us in the same families children sometimes healthy, sometimes syphilitic, sometimes scrofulous. And what is remarkable in them is, that we see a child affected with one or the other of these diatheses born *after* a child of good constitution. So that, if the affection which has spared the former attack those which follow, it is impossible to explain these variations by a spontaneous and gradually progressive diminution of the power of infection in the parents. It may also be observed here that the father did not, at the moment of procreation, present the signs of a confirmed cachexia, of tertiary syphilis of long standing, because he had still from time to time those syphilitic eruptions which belong only to the secondary period.

From these facts, and from what I have observed myself, it appears to me no longer possible to doubt the capability of hereditary syphilis to produce scrofula. But in the examination of the conditions under which it is produced, we must take care (as the experience of Baumès warns us) not to let ourselves be led into an exclusiveism to which facts would at once give the lie. If scrofula appears under these conditions, it is not solely because the parents were in the confirmed tertiary state; it is not solely because the child, chosen as the victim from among its healthy brothers, had a lymphatic temperament; it is not alone because it resembled the particular parent who was infected; because it has, alone, been nourished by her milk (when the mother is the culprit); because the influence of specific treatment was not brought about at the proper

time in it, or in its parents, etc.; it is by reason *of all these circumstances, or of several of them combined*, that we see the various shades developed which separate a strong and healthy child from one that is puny and sickly; the latter from one that is scrofulous; and this again from one evidently syphilitic. It is enough to say that, in respect to semeiology, there can be nothing precise, unequivocal, or pathognomonic in these affections. Conditions so variable as those I have just described absolutely forbid this. But in respect to the pathogenesis, we may, I think, sum up exactly enough the influence of each of them by saying that, directly or indirectly, the tertiary stage, the long standing disease, the absence of treatment, the lymphatic temperament of the children, bad nourishment, resemblance to the parent infected, all tend to modify the degree or the energy of the infecting power which has acted upon the fœtus at the moment of its procreation; that it is, in short, feeble, scrofulous, or syphilitic according to the dose of the poison which has exerted its influence upon it before and since its conception.

It must be mentioned that some authors still deny that syphilis is transmitted to children in the form of scrofula. They allege that in the country, where the habits are generally pure and syphilis exceptional, we do not see less scrofula than in the large towns, while the other conditions favorable to its development are equal on both sides. Assuredly, when we have to deal with an affection so obscure, so complicated in its etiology as this, we must not hope to give to this inquiry the precision of a mathematical demonstration. But it would be still more illogical, and above all more dangerous, to reject than to admit too easily any one of its causes. And if not specifically, it will at least be on the footing of the ordinary debilitating influences that hereditary syphilis ought, in my opinion, to be retained among the number of the agents which predispose to the establishment of the scrofulous diathesis.

A second point which presents itself is: *Is scrofula contracted under such conditions identical with ordinary scrofula?* Those who have reflected on the preceding facts, especially those who have themselves had the opportunity of watching the gradual development of a certain number of children begotten under similar circumstances, will recognize without difficulty that their *habitus*, the mode of their growth, and the number and nature of the diseases to which they are subject, do not realize the classical type of scrofula. Not, however, that such a difference is always appreciable, or that it always exists; for hereditary or acquired scrofula may also equally be propagated in these same cases, may become a complication of them, and thus bring back the symptomatic expression to its normal type. But marked differences are very frequently observed. The derangement does not confine itself, as in cases of pure scrofula, to ganglionic enlargements, affections of the bones, and various eruptions. Here it is the aggregate of the whole economy which has been attacked; and there is no

function which does not feel its effect, and suffer or languish. Physical development is slow or imperfect; digestion frequently becomes laborious; plumpness, that thermometer of the health of the new-born child, never rises much above *zero;* the complexion is pale, the flesh flabby; dentition is accompanied by innumerable derangements; the hair is scanty, thin, and discolored. Later on, puberty, a favorable crisis for other organizations, becomes in it a cause of new dangers.

As for the strictly pathological condition, almost incessant outbreaks at the mucous orifices, accompanied by glandular swellings and milky crusts, soon destroy the beauties of early childhood. Diarrhœa and catarrhs consecutive to whooping-cough persist or return with endless tenacity. Rickets and curvatures are added to the characteristic lesions of the osseous system. Convulsions or some more serious derangements of innervation show themselves, and return without any appreciable cause. The face is ravaged by lupus, the hairy scalp by chronic eruptions; intercurrent diseases, even those the most foreign to this condition, appear to borrow from it an especial degree of obstinacy or severity. Troncin had already observed this when he wrote: "If a child born of syphilitic parents does not die at birth, the slightest disease will carry it off."

Maisonneuve and Montanier have not understood this relationship exactly in this way. In their recent treatise on venereal diseases[1] they draw a distinct line of demarcation between true scrofula and that which they designate by the term *scrofuloid.* This latter state they consider peculiar to children begotten by parents affected with secondary lesions of long standing; they continue thin, with little hair, a pale, dull, somewhat earthy complexion, until five, ten, or fifteen years of age; about this period they are seized with an affection of the bones, which is distinguished from that produced by scrofula by frequently causing severe pains and seldom terminating in suppuration. The glands are less frequently affected in the scrofuloid form. Ophthalmia, coryza, and otorrhœa are its pretty frequent accompaniments. Lastly, that which, in their opinion, forms a distinction as marked as it is reassuring between the two affections is, that iodine does not arrest the progress of scrofula, and that, on the contrary, it cures the scrofuloid form as if by magic.

By comparing this description with that which I have given above, it will be seen in what they differ and in what they resemble each other. To Maisonneuve and Montanier, as to me, scrofula the result of hereditary syphilis does not appear absolutely identical with ordinary scrofula. But, according to them, it is scrofula *minus* certain symptoms, while I am disposed to regard it as scrofula *plus* certain symptoms. The perusal of their interesting remarks has not shaken my conviction, the result of careful observations; and I persist in thinking that, if we would trace out a faith-

[1] Traité prat. des Mal. vénér., 1853, pp. 365 and 396.

ful sketch of this special and still so obscure affection, it must be rather by adding some traits to the picture of scrofula than by modifying its essential features.

Is there any necessity of insisting upon the paramount importance of such problems? Every sensible man will understand of himself the wide vistas which they open out to the social economist, the legislator, and the physician, for the welfare of individuals, and the perfecting of our species.

If the reality of this mixed influence become established, if we succeed in determining strictly the conditions which bring it into action, and can specify the part which it plays in various diseases of infancy, a radical progress will have been effected. For we should then be in a position to prevent those diseases by antisyphilitic treatment of the parents, carried on longer than we are at present in the habit of doing, and by the employment, the bolder from the moment of its becoming rational, of the same agents against certain affections of children, for which the specific would then be found. I shall have occasion, in the therapeutic portion of this work, to resume this question, for which I ask the consideration and investigations of all those whose position enables them to follow from generation to generation the downward progress of the venereal poison in families.

PART III.—PROGNOSIS.

To say that syphilis is a more serious affection in new-born children than in adults, would only be to express a familiar truth. Conceived in such terms, this proposition would but amount to an assertion without import; for if no one disputed its correctness, neither would any one recognize its practical consequences. It suffices to open a page of the nosographies which treat of this affection, or to enter a hospital devoted to the treatment of it, to obtain an idea of the proportionably enormous mortality which presses at this age upon its victims. But neither reason nor humanity can be satisfied with such vague data: the one has a right to ask the cause of this peculiar fatality; the other seeks to become acquainted with the results by which it manifests itself, for the purpose of divining the remedy from its effects. Let us inquire first *why*, then *in what*, congenital syphilis is more serious. This will be to study prognosis from the points of view which admit of our drawing its most fruitful corollaries, in its etiological and semiological bearings.

CHAPTER I.

ETIOLOGICAL PROGNOSIS.

Among the writers who have endeavored to determine the cause of the serious dangers of congenital syphilis, the generality confine themselves to attributing it to the age of the subject it attacks. At a period at which development is so imperfect, and at which life offers so little resistance, is it surprising, they say, that a *dyscrasis*, bearing at the same time upon the solids and the fluids, producing moreover lesions directly compromising by their number, their extent, and sometimes by their seat, should involve derangements greater than the powers which the organization is capable of opposing to them?

Several reasons offer themselves in opposition to this explanation:

In the first place, the natural powers are not so rudimentary in the child that it must necessarily sink under diseases which it would pass through without risk at a later period. Is there, in this respect, a very great difference between the effect of acute diseases, pneumonia for example, in it and in a man of thirty?—very far from this: there are certain very serious affections, the shock of which it bears much better than the adult; affections, the danger of which, on the contrary, increases in a direct ratio to age. Such are the eruptive fevers, especially small-pox; an instance the more conclusive, inasmuch as it presents the double analogy to syphilis of a virulent disease and of one the manifestations of which occur chiefly in the tegumentary system.

Secondly, supposing—as is true—that the feebleness peculiar to early age had some share in the severity which syphilis then displays, is it logical to conclude that this is all? What! by virtue of the sole difference, should a disease which, in the adult,[1] is only exceptionally dangerous, very exceptionally fatal, become one of the most active causes of death in carrying off infants at the breast?

If the difference were the sole agent to be considered here, we ought to see its influence continue—decreasing, it is true—but continue in an appreciable manner until adult age. Thus, children accidentally contracting primary chancres would undergo the same chances of death as those

[1] The mortality in the venereal hospital is the lowest of all the hospitals of Paris. It is 1 in 203, that of the Hôtel-Dieu being 1 in 9.

who receive the infection from their parents. Children of fourteen or fifteen who contract syphilis by coitus would see its progress hastened and its prognosis, relatively to that of syphilis in the adult, rendered unfavorable in direct ratio to their youth. There would, in a word, be degrees of severity according to age. But nothing is more false. Syphilis, so often fatal in new-born children when inherited from their parents, scarcely ever compromises their existence when it has been accidentally inoculated from a primary chancre in the adult. In short, whatever its origin may be, it has neither a different evolution nor more serious dangers for adolescence than for riper age.

In the third and last place, congenital syphilis does not assume either the behavior, the progress, or the concatenation of symptoms of the syphilis of adults. A little observation suffices to show that we have here two diseases analogous, but not identical ; that if their prognoses differ, it is less on account of the age of the subjects they attack than from the nature and character peculiar to each of them. Producing, previous to any characteristic symptom, a kind of atrophy or stunted condition of the whole economy ; breaking out afterward at a hundred points almost at the same moment ; accompanied from the first by the visceral lesions foreign to acquired syphilis ; contagious by its slightest symptoms, congenital syphilis can be compared only to itself, and it is from its energy much more than from the weakness of its victims that we must ask the secret of the special dangers which it involves.

Even when this source of error has been avoided, the truth is none the less difficult of discovery. Let us make the attempt, however. For my part, I attribute to two distinct but always combined causes the greater banefulness of congenital syphilis ; first its mode of origin, then the conditions which induce its outbreak.

When a grown-up man acquires constitutional syphilis, it produces a deep-seated change in his organism ; but this change, effected only by the aid of molecular reproduction in the body, cannot be either more rapid or more integral than it. The modification is, therefore, essentially slow. Further, it remains for a long time partial, because it acts rather upon the molecules produced from the moment when it became developed than upon those which existed previously. Very far from this, the syphilis which exists anteriorly to the development of the being, imprints its seal upon the whole movement which is about to form the ovum into an embryo, the embryo into a fœtus. During nine months, the creative *nisus* will experience its fatal influence ; not a fibre, not a cell, will be added to those already organized, without the dyscratic perversion having vitiated the one and the other, as well in their histological composition as in the mode of their aggregation. The function and the growth of the germ becoming a human being will not escape for a single moment the ever present, ever active poison. In a word, we may sum up this fundamental

difference with no less correctness than lucidity by saying that, in the adult, the poison vitiates only the elements of nutrition, while, in the fœtus, it vitiates at the same time those of formation and those of nutrition.

The second class of causes explains perhaps still better the difference between the two kinds of syphilis. An adult contracts a chancre; at the age of two, three, or four months, constitutional symptoms appear. But do they always present themselves simultaneously, always in the same number, always in the same points? Certainly not; and it is here that accidental causes manifest their influence. If the lesions invade the throat, the hairy scalp, the anus, the skin, etc., successively in him, it is because the predominant vitality of these parts has attracted the syphilitic current to them in the corresponding order. If, in another case, the phenomena appear in the spring, after violent emotions, or after fatigues or excesses, it is because, by virtue of these circumstances, a stimulus is superadded to the slumbering diathesis, and has called it into action. Lastly, if the lesions affect certain organs by preference, as the eye, the testicle, the mucous membrane of the mouth or nose, etc., it is often because functional hyperactivity, or foregone diseases, having long habituated these parts to congestion, have more particularly directed the morbid discharge to them.

But it will be understood that as these causes refer, some to a given period, others to a given tissue, some to a particular organ, others to a particular region, they can only induce local syphilitic outbreaks from time to time and alternately in certain parts; for all the periods of life and all the parts of the human body cannot be upon an equal footing in reference to the influence of these causes, or all of them in a position to offer a simultaneous and identical predisposition to their action.

Yet what would be chimerical in the adult becomes a melancholy but striking reality at the time of birth. The instantaneous and fundamental revolution which the commencement of extra-uterine life effects in the whole organism, offers the most plausible explanation of this; for there exists here a cause of evolution with which none of the derangements to which the adult is exposed can vie in power. For even supposing them all combined, what morbid or physiological, physical or moral influence could effect in the functions this change, which is almost equivalent to a second creation? Which, above all, could effect it in a single moment? Neither must we be surprised if, under the stimulus of the new duties which nature imposes on them, the skin, the mucous membranes, the liver, the lungs, the thymus gland, and the digestive and respiratory orifices, are summoned at one and the same time both to duties and to diseases previously unknown. If an accidental excess of vital action sufficed, in the adult, to direct these diathetic crises to them, they now offer them a very different vantage ground; for, at this period, it is not a question of a transitory hyperactivity in them; they do not merely

assume a different functional type: they are actually beginning to exist.

It is now evident why the manifestations of congenital syphilis are effected in a few days in all parts of the body, attack at the same time the integuments and the viscera, and exceed in rapidity and extent the most violent constitutional invasions which we observe at a riper age? The preceding considerations would already suffice to explain the baneful prerogative which they exercise in this respect. Those which I am now about to point out, regarding the question from another point of view, will complete the explanation.

Congenital affections are not distinguished from those of the adult solely by the abruptness and the multiplicity of their manifestations; they differ also in the acuteness and the *extensiveness* of the lesions to which they give rise. They derive the former property, as we have seen, from their origin; they owe the latter to their nature. This point is somewhat difficult to define clearly, and, to make my idea intelligible, I am obliged again to employ the only comparative term which offers itself in such matters—the example of the syphilis of adults.

It is an established fact that, among the symptoms of all kinds which this latter affection engenders during its progress, there are acute and chronic, progressive and circumscribed, painful and indolent, febrile and apyretic, contagious and non-contagious symptoms. But upon what do these varieties depend? Upon a single element—the place which each of them occupies in the chronological order of the evolution of syphilis. The nearer they stand to the commencement of the venereal inquination, the more active, painful, invading, and communicable they are, and *vice versa*. A glance at the picture of the disease proves the truth of this statement. Thus:

Primary chancre is always and banefully inoculable; it ravages the tissues, and often produces an assemblage of serious secondary phenomena.

Mucous tubercles—very usually the second symptom in point of time—is no longer inoculable by the lancet. But numerous authorities admit fully, on the evidence of facts, its transmissibility by contact. It invades extensive surfaces, and often occasions severe pain in them.

Constitutional pustules and maculæ—which generally appear later—are neither inoculable nor contagious. But they are still propagated by the blood, from parents to their children. They occasion so little irritation that individuals are sometimes seen to be the subjects of them for several weeks without being conscious of their existence.

Lastly, tertiary symptoms, refractory to every mode of inoculation and contagion, have, according to good authorities, equally lost the property of being communicated by generation, at least with the specific characters of syphilis. They frequently remain unrecognized in the form of chronic engorgement: and if they sometimes produce acute sufferings, this arises

solely from the peculiar anatomical structure of the organic system which they attack by preference, and in which inflammation cannot reach a certain point without producing the phenomenon of strangulation.

But this progressive diminution is not an effect without a cause. It results from the invalidation which the depurative action of the organism effects in all morbid influences, especially in poisons. The pus of chancre, while passing through the lymphatic glands, leaves there a portion of its virulence ; and the proof of this is, that there is never more than one syphilitic bubo in the course of the same lymphatic vessel, the second gland reached not being subjected to a poison powerful enough to determine in it, as in the first traversed by it, an inoculable suppuration. A further proof is, that when a specific bubo suppurates, the poison has undergone so perfect a neutralization during this elaboration that it very rarely continues capable of producing constitutional syphilis.[1] Further on, the poison, having passed into the circulation, gives rise to a first outbreak of general symptoms ; but it becomes exhausted by degrees, either by these symptoms themselves, or by the gradual elimination of its principles effected by the various natural or morbid secretions, those valuable and remarkable agents of the physiological depuration constantly going on in the human body. The various symptoms which present themselves successively, at longer or shorter intervals, also lose more and more, as has just been shown, their acute character, and *become milder*, to use a popular expression, *as they grow old.*

Of these favorable conditions not one exists for the fœtus. In the first place, the poison is communicated to it by the semen, the ovum, or directly by the blood of the placenta. It therefore enters immediately into its formative elements, or into its vascular system, without having been modified by that digestion in the lymphatics which often frees the adult from its baneful consequences. On the other hand, without defence against its attacks, the fœtus finds itself equally deprived of the means of remedying their effects ; for the secretions and exhalations by which the deleterious principles might be expelled are inefficient during *intra-uterine* life, or remain in the rudimentary state.

And when this poison, exempt as yet from any neutralizing elaboration, breaks out under the influence of the thousand stimuli of *extra-uterine* life, we must expect a discharge as dangerous from the nature of each of its effects as from their prompt and simultaneous eruption. In fact, the symptoms which then show themselves have the capability of spreading the contagious property and the acute character which belong to primary affections ; and they have, at the same time, the tendency to appear in indefinite number, and simultaneously in the most various parts of the

[1] Ricord has very properly laid great stress upon this extreme infrequency of constitutional syphilis, as a sequel of chancres which have produced buboes terminating in virulent suppuration.

body, observed in constitutional affections. Experience confirms only too fully these data, which I myself should rejoice to be able to qualify with the name of mere theoretical assumptions. These corroding ulcers, which recall the fabulous times of the syphilis of the fifteenth century; these suppurations, which destroy in a week the bony structures of the nasal fossæ; these bullæ, invading almost visibly the whole external integuments; these hideous crusts, under which the face of the child remains buried until the last day; these collections of pus, which undermine the parenchyma of the most important viscera; these mucous patches, crowded and convergent, which multiply and propagate themselves with a rapidity which nothing can arrest; the undoubted contagiousness of many of these tegumentary lesions; the deep and sudden impression which such charges make upon the health; the early cachexia, and the termination which is its too common consequence—does not all give evidence of a peculiar virulence in the morbid agent; does not all indicate here symptoms in which nothing is wanting of the devouring activity of primary any more than of the almost instantaneous generalization of constitutional affections?

I had cause to say, then, on commencing this chapter, that congenital syphilis affects a gravity incomparably greater than that of acquired syphilis. It now remains to be shown in what this gravity consists, and to point out the effects by which it manifests itself.

CHAPTER II.

SEMEIOLOGICAL PROGNOSIS.

I HAVE reserved for this section the detailed indication of the dangers which congenital syphilis involves, whether for the child, or for the persons who come into contact with it. For the former, it is death during intra-uterine life, and, as a consequence, abortion; or else death after it has come into the world. For the latter, it is the communication of its disease, whether to the mother during gestation, to the nurse, or to indifferent persons. All these are questions full of interest and pregnant with controversy.

I.—*Abortion.*

That the embryo may be arrested in its development by syphilis; that this affection, which often kills it after birth, is capable of destroying it before, cannot well be doubted by any one, so greatly do evident and flagrant instances thereof abound. A hypothesis has, however, sprung up against this doctrine, and has gained ground. Far from accusing syphilis of these ravages, it is in its antidote that some writers have professed to find the culprit. Transforming such an error into a formal precept, De Blegny, as early as 1673, did not hesitate to state that "it is necessary to wait, before treating a pregnant woman affected with syphilis, until pregnancy is somewhat advanced, because until then the child is too feeble to resist *the impression made by mercury.*"[1] Since his time, the same tradition had been advocated, at long intervals, down to our own days; and (to quote one of the most recent and the most respectable) I find it represented in Huguier. This learned practitioner has stated positively, in a memoir read at the Academy of Medicine in 1840:[2] "Syphilis, left to itself, is not such a powerful cause of abortion as is generally believed. Abortion occurs chiefly in women treated with mercury."

But of all the points of dispute in connection with congenital syphilis, not one, perhaps, is so susceptible of clear and decisive solution as this. And if there be in pathology a truth strictly demonstrated, it is beyond contradiction the frequency of abortion in pregnant women affected with syph-

[1] L'Art de guérir les Mal. vénér., etc., p. 265.

[2] Sitting of July 14th.

ilis, and the direct power of syphilis to cause this accident. The annals of science actually swarm with observations in which three, four, or even six deliveries, in a syphilitic mother, inevitably terminate either in abortion or in the birth of syphilitic children. I will quote two instances only.

Bertin[1] treated a woman of twenty-six, who had flat pustules on the *labia majora*. She had already had them six years before, at the time of her first pregnancy, which terminated in abortion at six months.

The second child was born at seven months, and lived eight hours.

The third was born dead at seven months and a half.

The fourth was born at the full time, but lived only eighteen hours, and presented, at birth, pustules about the anus.

The fifth, also born at the full time, had pustules on the buttocks, and ulcers on the lips. It died at the age of six weeks.

Lastly, the sixth, which was also affected with pustules on the buttocks and hairy scalp, reached the age of four months without having undergone any treatment. It was then put under the influence of mercury, and its health restored.

C. F. Hasse[2] mentions the case of a woman, aged twenty-two, who contracted from her husband ulcers and condylomata in the vulva and throat. A first female child was born dead at eight months. The same was the case with the second and third child. The fourth reached the full time, but had hydrocephalus, and died at seven months. The fifth had a serpiginous ulcer on the face, which could only be cured by the gummy mercury of Plenck, and infected its nurse. The sixth was born with general erythema, and died soon afterward. Lastly, the seventh is tolerably healthy, but had some scrofulous affections at the age of two years. The author adds that the father and mother, convinced of their own healthy condition, refused to undergo any treatment.

Striking coincidences prove here the nature of the cause which determined the abortions. In both the cases the parents were affected with syphilis; in both some of the children were born at the full time with evident constitutional symptoms; in the first of them, lastly, the venereal nature of the lesions in the surviving children was demonstrated by their having been cured by means of mercury.

In other observations this therapeutic test has been still more significant, and a woman afflicted with continual miscarriages has been observed not to bring any pregnancy to a happy termination until after the diathesis which had previously impeded their progress had been eradicated by mercury. The following is a remarkable instance of this:

Ranking[3] knew a young man who was attacked by symptoms which two eminent surgeons pronounced to be *pseudo-syphilitic*. He married, and his wife contracted mucous tubercles on the perineum, *labia majora*, and about the anus. Cured by local treatment, she became pregnant and miscarried toward the end of the sixth week. A copper-colored eruption

[1] Op. cit., p. 142.

[2] Comment., Dresden, 1828, p. 18.

[3] Abstract of the Med. Sciences, p. 282.

then appeared, and anti-syphilitic remedies were administered, but very incompletely. Another pregnancy, with abortion about the fifth or sixth week. Attributing these accidents to weakness, she went to live in the country, again became pregnant there, and was delivered, at six months, of a dead child, whose skin peeled off everywhere. The chimera of pseudo-syphilis was then dissipated, says Ranking. Father and mother underwent a course of anti-syphilitic treatment for three months. Since that time she has had a child born at the full term, and which enjoys perfect health.

An entirely different class of facts will furnish us with a proof in the inverse sense. Parents contract syphilis. They had previously had living children; they will no longer have any other than still-born ones. This influence is evident in the following case:

A man, whose history has been related by Snow,[1] "had had three very healthy children. He then contracted syphilis, which he communicated to his wife. They both had constitutional symptoms which were imperfectly treated. The wife then becoming pregnant for the fourth time, she was delivered of a still-born child at the full term."

Lastly, and as if to render more striking the evidence of this cause, nature has sometimes arranged matters in such a manner that a syphilitic woman brings forth successively still-born syphilitic children and healthy children, according as she has had them by a syphilitic man or by a healthy man.

A woman was delivered in each pregnancy, about the seventh or eighth month, of a dead child, which bore well-marked signs of syphilis. A later child was born alive, but was attacked by syphilis, which carried it off in its first year. Her first husband, who had given her the disease, being dead, she had by a second husband a sound and healthy female child, although she herself continued to suffer from well-marked constitutional symptoms.[2]

Grouped together, these facts appear to me to throw a light upon the actual points at issue, which admit of their being decided in one way only. If the presence of syphilis is demonstrated in the parents; if one and the same woman, who went to the full time before having it, miscarries from the moment of contracting it; if she then has indiscriminately miscarriages or living but syphilitic children; if mercury cures the latter; if, lastly, mercury imparts to her the faculty of bringing to a happy termination the pregnancies which occur subsequently to its administration, then has syphilis evidently been the sole agent here, and it would be the grossest as well as the most dangerous error to suppose its antidote to be an ally.

The preceding observations suffice to show the period and the circum-

[1] Ranking, loc. cit.

[2] Journ. des Connaiss. Méd.-Chirur., 2d year, p. 258.

stances under which abortion supervenes. I am only anxious, as I wish to utilize this idea hereafter, to call attention to the fact that syphilis did not proceed from the father alone in any of those which I have just brought forward. This result would appear to refute the notion of Prieur, adopted by Lloyd and Wade. The first asserts, in fact, that abortions resulting from syphilis occur earlier; the two others, that they are more frequent when it is from infection in the father than when it is from that in the mother that the cause proceeds. Our observations do not authorize us to deny this assertion, but they do not any more oblige us to admit it; and it appears to me, on the contrary, that the mother—who furnishes the ovum, then to that ovum the materials of its nutrition and development—has, if I may be permitted to use the expression, both more means and more time to act upon it than the father, whose vivifying action is only instantaneous. Moreover, to exhaust the question, it would be necessary to distinguish between the cases in which the mother was syphilitic before conception and those in which she became so afterward, a difference to which there is nothing to show that the writers quoted above have attached the importance which it deserves.

Does abortion result from the disease in the mother or from the death of the fœtus? Gardanne decides the question arbitrarily in the first sense. It depends, he says, "upon an extraordinary sensibility in the neck of the womb in syphilitic women." It is easy to conceive that a woman who has reached a degree of constitutional affection verging upon cachexia is no longer capable of resisting the physiological labor the integrity of which is necessary for normal gestation. Thus—

Wardrop treated a lady affected with syphilis in whom a condition characterized by diarrhœa, sleeplessness, and acute pain in the side, returned periodically in the sixth month of pregnancy and caused abortion. She had already had six pregnancies terminating in this manner, and was cured by mercury.

But the progress of the symptoms does not allow the belief that the cause is usually of this nature. In general it is not after serious pathological derangements that syphilitic women miscarry. It is during a state of health apparently intact that the movements of the child cease to be felt; and soon afterward it is expelled.

As for the fœtus, there are sometimes found in it the signs or vestiges of the infection which has destroyed it. In other cases, nothing can be recognized except the relative imperfections of its development. But sometimes all indications of this kind are entirely wanting. Thus—

Campbell witnessed three miscarriages at six months in a lady whose husband was affected with syphilis. "But," he says, "the three fœtuses presented no change or dissimiliarity, for the degree of their development, to a healthy child which had remained for a similar period *in utero*."

II.—*Death after Birth.*

This is not the most common, but still it is a very frequent termination of syphilis at an early age. I had endeavored to determine statistically its comparative frequency, but the elements of a serious calculation are here absolutely wanting. Many writers take into consideration only their hospital practice, in which the infrequency of natural lactation adds to the disease a source of gravity foreign to its nature. A still greater number (and the conscientious Bertin does not entirely escape this reproach) place the fatal termination too easily to the account of intercurrent diseases. Others, lastly, allude only to the condition of the child; and, when once the characteristics of syphilis have been clearly established, make no further mention of its consequences.

A more precise idea of the mortality due to this cause may be acquired by reading the observations already quoted in this work and those which I have still to mention. Chosen from the most complete, they will sufficiently enlighten us on the period of death, the derangements which cause it, the accessory influences which may hasten it, and the circumstances which prevent or retard it.

As a transition from abortion to the death of an infant born alive, and as a remarkable instance of this latter consequence of syphilis, I will introduce here the following case:

Devergie[1] mentions a young man who had had symptoms of syphilis, and marrying afterward had ten children in succession, which died suddenly immediately after birth, from the effect of the syphilis with which they were tainted. The father having then consented to undergo a course of treatment which lasted eighteen months, an eleventh child was afterward born, which has always enjoyed good health.

Since the recent discovery of the specific changes in the liver, lungs, and thymus gland, coexisting with external congenital symptoms, it has been sought, as a rule, to attribute death to these visceral changes. Without any doubt, they often have a large share in it, but they do not always exist. If the silence of the older writers about them, who were not acquainted with them, prove nothing concerning their possible absence, the same will not apply to modern observers. There exist, in fact, cases in which the autopsy of children dying of syphilis has shown the complete integrity of these viscera. The case of congenital pemphigus of P. Dubois, quoted by Bouchut, might be ranked amongst these facts, notwithstanding the spots of sanguineous infiltration existing on the surface of the lungs; for this lesion does not appear to me either sufficiently extensive or sufficiently profound to have been the cause of death. Moreover, in similar observations, we must distinguish carefully between these true changes,

[1] Procès-verbal du Congrès de Nantes, p. 59.

with suppuration or induration of the parenchyma, and those congestions which debility and prolonged decumbency almost always produce during the last days of life. They have no specific character, but are met with in all children who sink under general affections of rapid progress.

III.—*Gradual Diminution of the Fœticidal Action of the Poison.*

As a compensation, in some sort providential, of the influence we have just been examining, this progressive spontaneous declension of the fœticidal action exercised by syphilis in the parents is fortunately a reality demonstrated by numerous examples. It has already been pointed out by several writers, and Simon affirmed positively, that "the syphilitic *dyscrasis* wears out and exhausts itself upon the first children." But however old this view may be, I shall not stop to examine the question; for it cannot be so interesting to determine the origin of it as the proofs.

These proofs are, however, so numerous, they bear such a stamp of clearness and force, that every man who repeats for himself the analysis which I have had occasion to perform, will, I affirm, be struck with their evidence, and will infallibly discover personally *this law of decrease*, as it may be called. The observations already quoted above in reference to abortion all bear witness in its favor; and it is curious to remark in some of them the regular diminution of the influence, expressing itself in the successive children by the longer or shorter duration of intra-uterine life. In the case related by Bertin it is almost a mathematical progression; for we see the first child born at six months; the second at seven; the third at seven and a half; the fourth at the full time, but surviving only eighteen hours; the fifth also at the full time, and surviving six weeks; and the sixth, lastly, living four months before any treatment was adopted. In most of the cases of this kind—and they are almost innumerable—it is equally by the more and more prolonged retardation of abortion that the rule is confirmed. If, then, the number of gestations give to this power of eliminating the poison which nature possesses time to act, it ends by causing, first, a delivery at the full time (the child being dead), and ultimately the birth of viable children. It must be understood that I am now examining the question apart from the modifications effected by treatment.

The same gradual diminution is still observed in the effects of the poison when, originally less energetic, it no longer attacks the fœtus *in utero*, but solely after birth. The following observation is most conclusive:

Lallemand[1] was consulted by a married couple named X——. The husband, some years before marriage, had had chancres, which were treated without mercury. His wife soon afterward, being pregnant at the time, had irritation of the genital organs. She took mercury, but in a very in-

[1] Journ. univ. de Méd., p. 27.

sufficient quantity. The child was born healthy, and continued so until the fourth month; it then became emaciated, and its body covered with pustules, and it died in two or three months after.

The mother now had ulcers in the throat. A new course of treatment, commenced at this period, was not properly carried out. A second child began to decline about the fifth month, and afterward sank with a general eruption. The mother was put under treatment for the third time.

At the end of the year a third pregnancy; the child had the same symptoms as the preceding one. The father was then put under treatment.

Some months afterward, a fourth pregnancy; at four or five months the child had patches on the skin, of the color of wine lees, then pustules about the anus. It was cured by mercury.

The mother had a fifth pregnancy, during which Lallemand treated her with the muriate of gold and soda. The child has continued healthy, having had nothing except some milky crusts, of which it was cured without anti-syphilitic remedies.

She has since had another child, which has not even been affected with crusts.

To all practitioners who know the little efficacy of the preparations of gold in the treatment of constitutional syphilis, it will appear only strictly just to attribute chiefly to spontaneous *decrease* the good health of the later children, of which the illustrious professor claims all the merit for the muriate of gold. However, as the numerous though imperfect treatments employed in these cases might throw some doubts upon its signification, I will refer sceptics to the observation of Haase mentioned above (p. 133), which shows, after three miscarriages, a child born dead at the full time, then two syphilitic children, and a fourth which was only scrofulous, all born of parents who had never consented to take mercury; to the twenty-seventh observation of Bardinet, in which we see a syphilitic mother bring into the world successively, first a dead child, then a child which afterward became affected with mucous tubercles; to the seventeenth observation of the same author, in which, in two successive deliveries, the children both sank under hereditary syphilis, but after having resisted it, the first twelve days only, the second a month. But I stop. It would be superfluous here to accumulate facts in support of this theory, when there is not a book, an article in the journals, nor a memoir on the subject, in which they do not abound, and solicit, as it were, the eye of the reader.

But I will state somewhat more in detail an interesting observation made by Doyon and Dron, at the hospital of L'Antiquaille:[1]

A woman, named D——, aged forty-six, came there on July 21, 1853, to seek treatment for a syphilitic affection which she had contracted eleven years previously, from suckling a child which had pimples on the body and limbs, and abundaut mucous patches about all the orifices.

This woman had herself pimples upon the breasts, then in the vulva,

[1] Gaz. hebdomad. de Méd. et de Chir., April, 1854.

alopecia, glandular swellings at the nape of the neck, the groin, and the axilla.

Her husband, a churchwarden, had had connection with her, and having been previously healthy as well as moral, saw, at the end of a fortnight, papulæ develop themselves upon his scrotum. He next had the disease in his throat and ultimately symptoms analogous to those in his wife.

But this woman, who had previously had four children without any trace of venereal disease (three of whom are still alive, while the fourth died of convulsions), again became pregnant after having infected her husband. She was delivered at the full time in 1844; but the child was small, yellow, and wrinkled. It had large pustules in the left axilla, and died when a fortnight old.

Another pregnancy in 1846; the child was born at the full time; it was puny, and the face wrinkled and old-looking. A month after birth pimples appeared about the anus, the genitals, and the mouth. It died at the age of two months.

The last pregnancy occurred in 1848. This time the child, born at the full time, lived. It is now five years old, but its health is bad, and there is little prospect of saving it.

It must be noticed that neither the father, the mother, nor any one of these three new-born children, has ever undergone specific treatment.

In this case the lateness in the appearance of the symptoms, as well as the duration of extra-uterine life, gradually expand in the most regular progression possible with each later-born child.

Yet, notwithstanding the number of the clinical facts which bear witness to its exactness, the *law of decrease* presents exceptions. But these exceptions, interpreted logically, support it much more than they invalidate it. I am about to prove this by quoting an instance of each kind.

In the case already quoted from Snow (p. 134), there were first, three healthy children; the fourth was born dead, at the full time. But it is in the interval between the third and fourth pregnancy that the father and mother had contracted syphilis. Here the exception is evidently only apparent.

Here is a second case:

A young man, whom Simon had treated by mercury for secondary ulcers in the throat, married. His first child was born strong and healthy. The four following children presented at birth indisputable symptoms of syphilis.

This fact, at first sight opposed to our law, admits of two explanations. Firstly, if it be true, as is at present taught, that mercury has only the property of curing and removing the syphilitic manifestations, without being capable of eradicating the diathesis itself, it must be admitted that the less time that has elapsed, at a given moment, since the administration of this remedy, the more will the individual be insured against the early appearance of a new manifestation. But the procreation of a syphilitic child is very certainly one of the most incontestible evidences of constitu-

tional syphilis in the individual who has effected it. There is nothing repugnant, then, in the idea that, in the case quoted above, the mercury recently prescribed still sufficed to maintain the seminal fluid of the father in good condition; and that it had, on the other hand, afterward resumed its venereal character in proportion as the effect of the treatment became lessened by time. This idea would indicate the propriety of renewing the anti-syphilitic treatment with each new pregnancy. This suggestion, which other observations tend to justify, will be discussed with the attention which it merits in the fifth part of this work.

The second explanation would consist in supposing that the husband, imperfectly cured (as the result has shown) of his venereal affection, has transmitted it to his wife between the first and second pregnancies; and that the second child, receiving the infection from both its parents, has naturally suffered more than its predecessor, who had only been subjected to the former.

But, among the exceptional cases of this kind, there are some in which the husband, previously infected during his celibacy, has had no new symptom, either primary or constitutional, from the time of his marriage. How can we conceive that he has communicated anything to his wife? Here it is the infection of the mother by the fœtus which can alone account for the exception to the law of decrease; and it may even be said—so incontestable is this law—that facts of this kind, even while receiving their explanation from the contagion thus transmitted to the mother, constitute themselves solid proofs in favor of this doctrine. For if we do not conceive the *increase* except by admitting the infection of the mother by her offspring, the reality of this mode of infection is, in its turn, rendered very probable by the progressive augmentation of the derangements in successive pregnancies, a phenomenon altogether unusual. It is under this double title that I bring forward the following fact:

In 1843 Campbell[1] was consulted about a lady who was pregnant for the fourth time. Her first child was born at eight months, and lived only eleven days. The second was born at seven months, and only survived an hour. The third pregnancy terminated in a miscarriage at six months. Campbell convinced himself that she had never had symptoms of syphilis. The husband confessed that, seventeen years before marriage, he had had syphilis several times, of which, though assured to the contrary, he had never been completely cured. At that time, however, he showed no trace of the disease. Mercury was administered to both parents. They then had a healthy little girl, born at eight months.

Here the husband was no longer capable of transmitting anything to his wife; but he communicated the disease to his children. These developed it in their mother by means of the blood they returned to her. And

[1] The London and Edinburgh Monthly Journal, 1844, p. 514.

we may, by observing the increasing earliness of the successive miscarriages, see the gradual effects of this contamination, from which she does not herself appear to have suffered personally, but of which the deleterious effect upon the vitality of her offspring went on increasing.

In other cases, the mother does not resist this return shock produced by each fresh pregnancy. Her health, previously intact, is shaken by the first; after the second, evident symptoms of syphilis appear. This semiological history is repeated, trait for trait, in the following observation.

Mr. T—— married after having had four venereal affections, imperfectly treated. He was weak, but had no specific symptom. A year afterward his wife was delivered of a child, apparently healthy, but which, when three weeks old, presented a very well-marked pustular venereal eruption. From this time, the health of Mrs. T—— became precarious. The child died at the age of eleven months. She then had a second child, which died, like the first, at ten months. Four years afterward she was attacked by dry copper-colored pustules, and cracks and fissures in the palms of the hands. Mr. T——, not having had any distinct venereal symptom since his marriage, did not adopt any treatment, but two exostoses supervened.[1]

A significant dissimilarity manifests itself between the cases of *decrease* and those of *increase;* and it is so marked in the observations quoted above as examples, that it cannot have escaped the eye of the reader. It is, that in all the cases of decrease the mother was syphilitic, alone or in common with the father; in all those of increase, on the contrary, the affection in the first children proceeded from the father alone. Upon what does this contrast depend? It can only be understood in one way. If, at the time of the first pregnancy, the mother is diseased—the father being so or not—the diathesis ought to go on decreasing in them, because the father being able to defend himself against contagion which might accrue to him from his wife, and not being subjected to any from the fœtuses, escapes it, and never contributes a new element of infection to his later children. And, in reality, the effects of the diathesis, appreciated by the varying period of the deaths of the children, show that it actually goes on decreasing in such a case. If the father alone be, on the other hand, affected at first, then it is not surprising that the influence exercised upon the life of the children becomes more and more deleterious; for, sooner or later, whether by the fault of her husband, or by the involuntary fault of the children which she bears in her womb, the wife shares the diathesis. And from this moment she adds to the fœticidal principle, furnished at first by the father alone, a new element all the more active because, reinforced at each fresh pregnancy, it realizes in its literal rigor the classical *vires acquirit eundo.*

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[1] De l'Extinct. de la Mal. vénér., 1834, p. 50.

IV.—*Transmission of Syphilis from the Fœtus to its Mother.*

In addressing myself to this important and mysterious question, I am merely carrying on the preceding subject; for several of the facts related above bear directly upon it, and there is not one of them which does not, more or less, contribute to prepare the way for its solution.

This question is, from its very nature, doomed to a long investigation before it can be definitely settled. Indeed, none of the parties being able to appeal to facts absolutely conclusive, either *pro* or *contra*, we are compelled to make up for quality by quantity, to wait until a fortunate chance connects under the eye of the observer the circumstances so rarely grouped together, from the aggregate of which not a proof (which is here almost impossible) but a probability may spring.

As a compensation for these difficulties, the tendency to systematize has, hitherto at least, respected this problem. Each writer furnished his doubts, his leanings, and his assumptions. No school made a *cabinet question* of the solution of this clinical problem in any one given sense; and the study of it has been pursued with the calmness and impartiality necessary for a work of long duration, which our grandchildren only, are perhaps destined to bring to a happy termination.

Would passion seek, in the end, to usurp this corner in science, hitherto closed to its suggestions? I had reason to fear so on reading the most recently published work on venereal diseases, the treatise of Maisonneuve and Montanier. I shall not imitate their example; I do not seek to oppose equivalent affirmations to their absolutely negative conclusions. If my egotism could hope to find some advantage in it, science would certainly lose thereby; for it is not by affecting a tone of certainty, where it is radically unjustifiable, that we shall make real progress. Is it not better to confess our doubts frankly? On these terms, I do not fear to set the example.

Two paths present themselves for the solution of this question; *induction* and *experience*.

A. In the first place, is this idea of an infection of the mother by the fœtus so indefensible against logic as many are pleased to assert? Without doubt it is not. Is it not universally admitted that if the mother contract syphilis during her pregnancy—the father being healthy—she may communicate it to the fœtus? Assuredly yes. But by what mode of transmission is the disease produced here? Incontestably by the blood; since, after conception, it is only by means of the utero-placental vascular system that the fœtus is connected with its mother. But if the syphilitic blood of the mother suffice to infect the fœtus, why may not the fœtus—having received syphilis from its father—be capable, in its turn, of infecting its

mother by the blood which it sends back to her? Is it not, in both cases, the same agent, taken at a similar period from the same disease, which circulates in the same vessels? And in the presence of such a perfect identity of causes, is it then so very hazardous to infer the possibility of a similar effect?

I foresee an objection: it is arterial blood which the mother transmits to the fœtus; it is only venous blood which she receives from it. But the former, more vital, exercising an essential influence in nutrition, and being conveyed more directly to the organs, may well propagate the contagion, without the latter, whose attributes are entirely different, necessarily doing so.

But this argument, specious in one point of view, does not, I may fairly say, show that those who employ it have a very clear idea of the part which the blood plays under these circumstances. Its more or less vivifying properties are not here in question, for it has not to exercise an exciting or depressing action upon the organism into which it enters, but a specific action. Its properties are of little consequence since it is only a vehicle. Whether arterial or venous, its difference in this respect is only to be taken into consideration, inasmuch as it will allow of the propagation of the principle it contains in one direction or the other. A given vehicle sometimes neutralizes the action of a poison; but what can it ever add to it? Moreover, in the natural absorption of the venereal poison, as well as in its artificial inoculation, is it not the returning portion of the circulating system which opens a way for it, really and unfortunately only too sufficient? Is it not into the veins that all experimentary injections of poisonous substances have been made?

But, it will be said, if the *quality* of the fluid does not constitute any difference between the chances of infection run by the mother and the child, its *quantity* constitutes a considerable one. It is true that the fœtus receives everything from its mother; and if the source from which it derives exclusively the materials of its nutrition be contaminated, it can no longer elude the poisonous consequences; while the column of blood which passes from the placenta to the mother is but a very small portion of the fluids by which her nutrition is maintained. This objection rests upon a very correct datum, but, in studying the action of poisons, every one knows that we must entirely omit the consideration of the dose. A contusion is unnoticed or causes death, according as it is slight or severe. The vaccine or variolous virus, the pus of glanders or chancre, on the contrary, when the conditions necessary for their absorption are realized, produce with a drop or an ounce the same effects to the same extent.

The difficulty is further brought forward under another aspect, and it is said: the blood which flows from the arteries of a syphilitic woman reaches her fœtus without having undergone any change. On the other hand, when a fœtus infected by its father returns blood to its mother, this

blood has first traversed its tissues, contributed to its nutrition, and assisted in the secretions peculiar to that age, and these various elaborations or filtrations may well have deprived it of its infecting properties. No one knows positively the result of these modifications of the fœtal blood, and it would be rash to attempt to assign limits to their action. But it may at least be affirmed what they do not do ; and I, for my part, am thoroughly convinced that they do not deprive the blood of its syphilo-genetic power, because this blood, after birth, will produce in the same subject morbid lesions (constitutional symptoms) which are eminently contagious. In a word, if the blood of the fœtus, after having traversed its capillaries and passed through its emunctories, goes on to produce in its skin lesions which, so soon as it has been born, are communicable to the nurse, why should this same blood, a week or a month earlier, be regarded as innocuous to the mother who is constantly absorbing it ?

Lastly, it might still be said that the infection of the mother, when it does not break out in symptoms until after delivery, is due to the special impression which the semen of a syphilitic man produces upon the ovary. But, as I have already shown (p. 17), it is much more reasonable to attribute the contamination of the mother to the influence exercised upon her by the fœtus, than to admit this direct influence of the semen, against which all the authorities and every analogy testify unanimously. However, in whatever way it may be understood, the explanation does not invalidate the fact, nor alter in any way the importance of the diagnostic and therapeutic consequences which its possibility calls forth, consequences which I will state, if only to justify the length of such an abstract discussion.

Suppose a woman whose husband has had syphilis at a former period, has herself continued healthy. After the birth of a first and syphilitic child, her health becomes affected ; she presents equivocal but alarming symptoms, which become aggravated on each new delivery, however regularly these may terminate. Can it be resolutely denied that syphilis may have some share in the production of these derangements ? Is it irrational to regard them and to treat them as syphilitic ? Too frequent examples authorize me in insisting upon the necessity of not too readily giving an affirmative answer to this question.

B. Experience expresses itself in two ways—by authority and by facts. Custom tends, in our day, to listen to the latter only. I willingly confess that I concur in this, and can easily understand this preference in questions where phenomena easy of establishment furnish an evident solution. But in problems surrounded, like this, by circumstances which prevent us from going beyond a mere probability, the opinions of men who draw conclusions from their practical impressions are, it appears to me, of great weight, even when the impossibility of bringing forward in-

contestable facts causes them to regard it as useless to relate the cases upon which those opinions are founded. This authority is especially decisive when it emanates from celebrated writers, consummate clinical observers, and representatives of the positive school. Finally, it acquires a higher value for me when two writers known to differ upon several other points entirely agree to decide here in the same sense. But I find myself in a position to furnish this proof of the reality of the infection of the mother by the fœtus. Ricord[1] wrote to me: "This opinion is not easy to prove beyond dispute; for the virtue of the women may always be more or less doubted. But in spite of the incredulity and scepticism induced by my long practice, I have been forced to yield to the evidence of facts."

Depaul, on his part, tells me that he persists in regarding the following proposition as the result of careful observation: "The mother being incontestably healthy, while syphilis could have been transmitted by the father alone, and that only at the moment of fecundation, the embryo, being for some time alone diseased, may in its turn, during its sojourn in the womb, infect its mother."[2]

The terms in which Ricord has publicly stated this view are the following: "The father may beget a syphilitic child, which may propagate the secondary poison to its mother; for the latter had continued healthy, though married, so long as she had no children."[3]

No one, certainly, will be inclined to believe that Ricord and Depaul would bring forward such a theory so explicitly without having before them numerous facts in support of it. Depaul is, I know, about soon to publish his observations. Meanwhile, I will relate the facts which have come to my own knowledge.

Mr. T—— married after having had venereal affections four times, which were imperfectly treated. His health was feeble, but he had no specific symptoms. A year afterward his wife was delivered of an apparently healthy child, which had, however, when three months old, a well-marked syphilitic pustular eruption. From this moment the health of Mrs. T—— became precarious, and she had profuse leucorrhœa. The child died at eleven months. A second child sank at ten months. Four years afterward she was attacked by dry copper-colored pustules and cracks and fissures in the palms of the hands. Mr. T—— not having had, since his marriage, any well-marked venereal symptoms, did not undergo any treatment, but he had two exostoses, from the consequences of which he died, further worn out by the effects of a stricture of the urethra.[4]

Mrs. P——, married in October, 1848, healthy before and after her mar-

[1] Gaz. Méd. de Paris, 1849, p. 753. This view was first brought forward by that illustrious writer on syphilis in his lectures of 1847.

[2] Extrait du Mémoire lu à l'Acad. de Méd., April 29, 1851.

[3] The Lancet, 1848, p. 384.

[4] Troncin: De l'Extinct. de la Mal. vénér., 1834, p. 50.

riage, was delivered May 30, 1849 (although she considered herself to be in the eighth month only of her pregnancy), of a small, but lively and healthy child.

Dr. Semanas, who had delivered her, received, some days afterward, a visit from the husband, who came to consult him about an eruption of long standing on the hairy scalp. Dr. S. recognized syphilitic pustules there, and observed, further, alopecia and a very characteristic eruption on the palms of the hands.

Mr. P—— stated that this affection, of the origin of which he said he was ignorant, dated from several months before his marriage. He did not remember having had a chancre. Specific treatment was prescribed.

The child had, when five weeks old, ulcers behind the ears and on the hairy scalp. It was emaciated, and had the expression of old age. A colliquative diarrhœa carried it off after a few days of an entirely inefficacious treatment.

As regards the mother, whose confinement terminated most satisfactorily, she was attacked about the same time as her child (which was then being wet-nursed) by numerous pustules about the nose and mouth, as well as on the hairy scalp. Two days after, similar pustules appeared on the genital organs. In the following week a roseolous eruption appeared upon the trunk and extremities. Periosteal pains and ulcers in the back of the throat afterward supervened.

This patient, treated actively with iodide of mercury and iodide of potassium, alternately or in conjunction, was cured pretty quickly. The husband, also subjected to the same treatment, recovered somewhat more slowly.[1]

Maisonneuve and Montanier[2] regard the interpretation of these symptoms given by Semanas as *more than improbable.* To refute it, they rely :

1. On the circumstance that the morality of the mother is very doubtful, since she was delivered, *after seven and a half months* of marriage, of a child, small but healthy, and, they say, "doubtlessly at the full time." This assumption is entirely arbitrary, for Semanas does not in any way specify, in his observation, at what period of the month of October the marriage took place ; and it is absolutely only to substantiate their criticism that Maisonneuve and Montanier convert a child, reported by Semanas to have been *of small size,* into a child at the full time, and a delivery eight months after conception into one at seven months and a half.

2. On the circumstance of the husband's having had for several months, without seeking treatment, a syphilitic eruption on the hairy scalp and on the palms of the hands !—such carelessness, they say, is not probable. Maisonneuve and Montanier have never, it appears, met with patients unconscious of venereal affection so little inconvenient as this, or who neglected to seek treatment for it. As for me, on the contrary, this want of care, in such cases, agrees perfectly with the habits of patients, at least of those I am in the habit of seeing every day.

On the strength of this double ground of suspicion, Maisonneuve and

[1] Gaz. Méd. de Paris, 1849, p. 777.

[2] Op. cit., p. 373.

Montanier venture upon the suggestion that (although no sign or vestige of syphilis was discovered in her during the whole period of pregnancy) the mother had either been infected by her husband, or that she had herself infected him, having contracted the disease from another man.

To such a chain of reasoning we have no answer to make; for the very weakness of its arguments is but a further proof in favor of the theory which it attacks.

Tyler Smith [1] also believes that syphilis is propagated from the father to the mother, through the fœtus. He is of opinion that this occurs especially when the poison has acted upon the placenta in such a manner as to cause abortion. Then he says the mother is "pretty sure" ultimately to participate in the disease.

In conclusion, I will relate, as conclusive on the same grounds, the following observation which has been communicated to me by my very esteemed friend, Dr. Langier of Vienna:

Mrs. X——, of the village of C——, aged twenty-seven, had, six months ago, a child which died at three months and a half, emaciated and covered with sores and pimples about the mouth and anus, although it had been born healthy.

Mrs. X—— herself had not, either before or during her pregnancy, experienced anything which could suggest the idea of syphilitic infection. Three months after her confinement she had, as a sequel of mental trouble and exposure to cold, a febrile accession, which lasted two or three days, and after which she became the subject of very large and very numerous flat tubercles on the vulva; three weeks after, similar ones appeared at the commissures of the mouth, and later still ulcers in the throat. When Langier saw her she had, for two months, presented these various symptoms, which he recognized without difficulty as being evidently syphilitic.

This patient asserted that she had never had sexual intercourse with any one but her husband. The nurse of this child had always remained healthy.

The mother believed her husband to be healthy, but he, when questioned by Langier, confessed to having been the subject, six years before, of an obstinate venereal affection, which had left behind it for a long time disease of the throat, and had at last disappeared in thirty or forty days, under the influence of homœopathic treatment. Since that time he had never experienced anything which could make him fear a relapse. However, during his wife's pregnancy, he had had small crusts on the hairy scalp, which continued for a considerable time and reappeared pretty frequently. He had also had some pimples of long standing in the nape of the neck and on the chest.

But at the time when Langier examined him (in December, 1852) he did not present any indication or visible trace of syphilis. He has several times had connection with his wife since she has been ill, and no local indication of infection has shown itself in him.

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[1] The Lancet, March 11, 1854, p. 266.

Since receiving the above, I have seen a new and very conclusive instance of infection of the mother by the fœtus:

Mr. X——, of St. G——, was treated by me, in 1852, for secondary syphilis. As he was about soon to marry, he pushed the general treatment as far as I desired, and on the day of his marriage had been for several months exempt from any suspicious symptoms.

His wife, a young and innocent woman, became pregnant at the end of two months. Having remained healthy until the end of the third month of her pregnancy, she then had a copper-colored eruption on the abdomen and arms, preceded by cephalalgia. No treatment; abortion at five months. When I saw her, two months afterward, her face, neck, and arms were covered with syphilitic papulæ; she had ulcers in the throat, alopecia, chlorosis, swelling of the cervical glands, etc.

It is to be observed that the husband, much in the habit of examining himself carefully, had not, up to that time, observed any new symptom.

Besides these detailed cases, in which symptoms characteristic of secondary syphilis appear in the mother after delivery, there are other instances, less decisive, perhaps, because the syphilis does not put on its normal type in them, but which bear witness, at least, to an analogous influence exercised by a syphilitic child upon its mother. How many robust and healthy young persons do we not see, who marry syphilitic husbands and retain all the attributes of health until their first confinement? From this moment—and although the confinement has terminated happily—they become feeble and begin to lose flesh. They miscarry or bring forth syphilitic children. Each new pregnancy aggravates their distressing condition. Are not these consequences, which Lallemand has mentioned, which Maisonneuve and Montanier admit and describe, and which I have myself observed, an effect of the disease in the fœtus, a disease which, without vitiating the humors of its mother to such an extent as to develop in her the true syphilitic diathesis, has effected in her organism a derangement only too real?

V.—*Transmission of Syphilis from the Suckling to its Nurse.*

Primary lesions, chancres, existing in a child, may be communicated to the nurse, precisely in the same manner as they pass from the organs of a woman to those of a man, in consequence of the friction of coitus. Every theory admits the reality of this phenomenon, of which there can be no doubt.

But do the lesions of congenital syphilis possess the same communicability? In other words, and to speak more precisely: *Can a child, affected hereditarily with mucous patches on the mouth, for instance, communicate the same disease to a healthy woman by whom it is suckled?*

Hunter and Ricord, or at least some of his school, answer in the negative. But since instances of nurses infected by their foster-children exist

and recur daily, they could not confine themselves to a simple negation. They have taken a more logical but more difficult position; they have sought to explain them by endeavoring to adapt to the exigencies of this proposition the theory which teaches that primary chancre alone is contagious. They boldly affirm then, that *if a new-born child transmit syphilis to its nurse, it is because it had, itself, a primary chancre,* and, as a counterpart, that *if only hereditary syphilis, constitutional lesions, exist, it will not transmit any disease to its nurse.*

This explanation has made some proselytes, but its opponents are still more numerous. Framed with some bias, attacked not without acrimony, it has often been its fate to have to record adhesions or oppositions founded rather on personal sympathy or repulsion than on the consideration of the clinical proofs to which it appeals. And yet if ever a proposition deserved a calm discussion, it is assuredly this, the adoption of which endangers the health of thousands of nurses, if it be false; while the rejection of it, if it be true, compromises the lives of an immense number of new-born children, by depriving them of their natural food to condemn them to the sucking-bottle. I shall endeavor, then, to forget too weighty predecessors; I shall dismiss all useless animation from the discussion, at the risk of appearing fastidious; I shall continue sceptical when necessary, without fear of being taxed with irresolution; and I shall frequently omit proper names, even though I should be reproached with want of respect for the owners of them.

Here are, first, some observations quoted without commentary. They are given solely for the better establishment of the *question of fact,* in its most general form and its principal varieties. I have, consequently, thought it right to borrow them from both schools indiscriminately.

Ambrose Paré[1] has described, in the quaint and figurative style peculiar to him, one of those concatenations of infections so common under such circumstances:

"A certaine very good citizen of this Citie of Paris granted to his wife, being a very chaste woman, that conditionally shee should nurse her owne child of which shee was lately delivered, shee should have a nurse in the house to ease her of some part of the labor. By ill hap the nurse they tooke was troubled with this disease; wherefore shee presently infected the childe, the childe the mother, the mother her husband, and hee two of his children who frequently accompanied him at bed and board, being ignorant of that malignity wherewith hee was inwardly tainted. In the meane while the mother, when shee observed that her nurse childe came not forward, but cryed almost perpetually, shee asked my counsell to tell her the cause of the disease; which was not hard to bee done, for the whole body thereof was replenished with venereall scabs and pustles, the hired nurse's and the mother's nipples were eaten in with virulent ulcers; also the

[1] Œuvres d'Ambrose Paré, 11th edition, 1852, p. 445. (The above English version is from an old translation.—ED.)

father's, and the two other children's bodies, whereof the one was three, the other foure yeares old, were troubled with the like pustles and scabs. I told them that they had all the *lues venerea*, which tooke its originall and first offspring by maligne contagion from the hired nurse. I had them in cure, and by God's helpe healed them all, except the sucking childe, which died in the cure. But the hired nurse was soundly lashed in the prison, and should have beene whipped through all the streets of the citie, but that the magistrate had a care to preserve the credite of the unfortunate family."

The following observation[1] is regarded by Bouchut as one of the most complete which have been published; it is for this reason that I quote it here:

A woman named Ch——, previously in good health, and the mother of four healthy children, took a child two months old to nurse. At the end of six weeks she observed some small pustules on the breasts, then fissures and ulcers, and swellings in the axilla. The fissures increased in size, and the ulcers resulting from them extended around the base of the nipple. A few days later this woman's own child was attacked by pustules on the face and around the mouth, then on the arms, back, nape of the neck, and chest, and about the anus. She then sent her foster-child back; and after having, together with her child, undergone an imperfect course of treatment, came to Lyons for advice. Geusoul and Leriche, having investigated the case, recognized a syphilitic affection, and prescribed a mercurial treatment, the good effect of which confirmed the diagnosis. However, when Bouchacourt examined her, he found two indurations above and at the inner side of the left nipple, one of which was still ulcerated. He ascertained that the strange child, when intrusted to the woman Ch——, had its face swollen and covered with pimples, a discharge from the nasal fossæ, and still recent violet-colored cicatrices on the buttocks. Lastly, it was discovered that it had already, while with a former nurse, undergone a treatment consisting in bath and syrups, prescribed by the medical attendant of its parents, and that this nurse had become diseased.

Had the strange child syphilitic lesions of the mouth? Did these lesions consist of pustules, ulcers, etc.? Were they secondary, or rather primary, as the persistence of indurations would seem to indicate? Nothing whatever is wanting to this history but indication of these three circumstances to render it an available proof in favor of the old theory.

I place after this a case observed by myself, such as we daily meet with in practice, more simple, less complicated with successive transmissions:

I was requested, on July 5, 1851, to treat a child of Mrs. B——. Born on April 22d of the same year, it had had, at the end of a month, an eruption of large bullæ on the soles of the feet, the palms of the hands, and the face. Those upon the face became covered by thick, blackish crusts, which still existed at the time of my examination. I was told that it had had pustules upon the scrotum and about the anus. The mother

[1] Revue Méd., May, 1841.

had presented, during her pregnancy, constitutional symptoms, of which I recognized the evident characters, roseola, mucous tubercles on both tonsils, and sub-occipital ganglia. The child sank at the age of five months.

While it was being suckled, its nurse, a countrywoman, who was silly as well as little attractive, and had been two months in the house, showed me a red spot below the right nipple. About the size of a centime, little raised, and the seat of a slight desquamation, this spot caused me at first but little uneasiness. It remained, however, until, the child having died, the nurse returned to her home.

But at the end of a month she returned, accompanied by her husband, with a general syphilitic papular eruption, ulcerated mucous patches on several parts of the mouth, impetigo of the hairy scalp, commencing alopecia, and cephalalgia. I examined her genital organs, but could not find any suspicious traces in them any more than in the sub-maxillary glands. I subjected the husband to a similar examination with equally little result, and it was sufficient to take a glance at his disfigured companion to recognize with certainty the origin of the disease, without extending the inquiry to her acquaintances. Mercurial treatment was prescribed for this unfortunate woman.

It is just to let those be heard now who deny the contagiousness of congenital affections. The few following facts will give an idea of the way in which they view the case I am now investigating:

A nurse went to consult Cullerier, senior,[1] in the course of the year 1797, complaining of having contracted syphilis from a strange child which she was suckling. The whole of her body was covered with lenticular and squamous pustules. The child, seven months old, presented as yet nothing but coryza and some pustules on the genital organs. But what tended to confirm this woman's story was, that the father of the child had had chancres during the early part of his wife's pregnancy, and had even communicated them to her. The parents therefore believed themselves to be in fault, and were willing to yield to the demands of the complainant. But as Cullerier suspected, from the nature and age of the pustules of which she was the subject, that this woman had become diseased before her foster-child, he insisted upon examining her husband. He found a large cicatrix in his groin, and induced him to confess that he had had a suppurating tumor there.

No doubt this discovery was well adapted to throw some suspicions upon the husband, but ought it to have directed them all to him? Ought not Cullerier to have examined the mother of the child, to see whether he could not recognize some more characteristic traces of constitutional infection—*possible enough from the antecedents*—than a cicatrix in the groin?

Cullerier, at present surgeon of l' Ourcine, has given me the history of a case much more conclusive in the same sense. He had received under his care a young woman, a nurse, affected with constitutional syphilis, and whose foster-child had ulcers inside the mouth. This woman accused the parents of the child, and pressed Cullerier very much to certify that

[1] Journ. Gén. de Méd., t. lv., p. 32.

she had contracted from it the disease from which she was suffering. Nevertheless, the perfect resemblance of the evolution of the symptoms in this woman to that of the affections which follow a primary chancre had inspired Cullerier with the most serious doubts as to the truth of her story. Before examining her, however, and better to ascertain how far, under such circumstances, patients will carry the impudence of their dissimulation, he questioned her privately on two different occasions, in the manner best adapted to assure her of the discretion which he would practise in keeping her confidence secret. She always denied positively having been affected first. After having allowed her several days to reflect and to retract what she had affirmed, Cullerier proceeded to a direct examination, and recognized on one of the *labia majora* the induration which is the indisputable sign of infectious primary chancre, quite recent. For greater certainty, he sent some one to examine her husband. It was stated, with some embarrassment, at his house, that he was absent in the country at the time. These answers awakened some doubt. By a lucky inspiration, the register of the entries at the Hospital du Midi was examined, and his name having been found, it was ascertained that it was there that he was *enjoying the country air*, under the care of Ricord.

Hunter having inscribed himself amongst the number of those who deny the transmissibility of constitutional symptoms from the child to its nurse, I cannot dispense with borrowing an observation from him also. But at the same time I cannot refrain from pointing out that it appears to me quite as conclusive *against* his opinion as the preceding one of Cullerier is *in favor* of it.

A lady, delivered September 30, 1776, and having a large quantity of milk, suckled her own child at one breast, and a child out of the neighborhood at the other. At the end of six weeks the breast given to the latter became diseased; several small ulcers formed about the nipple, and ultimately destroyed it. The glands in the axilla became swollen, but their tumefaction terminated by resolution. The strange child had aphthæ in the mouth and hurried respiration. It died of phthisis, and presented ulcers on various parts of the body. The mother, after having suffered pains in various regions, had an eruption of spots on the arms, legs, and thighs, some of which ulcerated.

The sequel of the observation informs us that this lady had, three years later, a child which presented symptoms of constitutional syphilis, under which it sank at the end of nine weeks, after having communicated them to its nurse, who also died of them.[1]

Before entering upon the essence of the discussion, I wish first to call attention to a point connected with it. Those who do not believe in the transmissibility of secondary lesions are forced to explain *all* the facts of this kind by the anterior existence, unrecognized or concealed, of a primary chancre in the person infected. Their antagonists are not compelled to show themselves so exclusive; they may thoroughly admit (if they do not all do so) that a primary chancre may occupy the mouth of the child and be trans-

[1] Hunter on Syphilis.

mitted from it to the breast of the nurse; that the latter, in other cases, may have contracted it in another manner, and really owe to it the constitutional disease of which she wrongly accuses her foster-child of being the source. They recognize this, but this version, according to them, would not account for *all* the instances in which syphilis is said to have been transmitted from a suckling to its nurse. And it must be confessed that weighty considerations plead in favor of this eclectic view to which I incline, and which I am striving to render valid.

A. The *number* of these cases, independently of their quality, is a first argument of which an observer of any experience will not dispute the value. Primary chancre is an exception in the new-born child. The various modes by which it could contract one are so unnatural, unforeseen, and extraordinary, that a fact of this kind, well authenticated, is an era, it may be said, in the career of a medical man; that one must be a specialist, and a specialist in large practice, to have seen several such. On the other hand, what practitioner has not, a certain number of times, listened to the complaints of a nurse infected, as she says, by the child entrusted to her? And if, in such a case, we mount to the source, the parents almost always justify by their conduct and antecedents the suspicions of which they are the object; so that, without altogether exculpating the nurse, these first inquiries, even before the direct examination of her contaminable parts, generally suffice, according to the ordinary view, to divert a large share of the responsibility from her. To sum up, and in other terms, the *number* of primary chancres, the existence of which has been established in new-born children, is out of all proportion to the number of women who profess to have contracted venereal disease from suckling strange children.

B. So it is, generally, to a *chancre contracted conjugally or pseudo-conjugally by the nurse*, that the ultra-Ricordian school attributes the origin of the disease by which she has first been affected, and which she afterward communicates to her foster-child. And as, in this hypothesis, they are interested in concealing their disease, and in giving rise to the belief that they have contracted it from the child, advantage has unscrupulously been taken of their position to affirm that this calculation, which they would be so anxious to make if they were culpable, is always made by them because they are culpable. Assuredly I shall not attempt to become the pastoral defender of village morals. The student of medicine is not more subject to illusions in reference to virtue in a hut, than to austerity at court. But if debauch elude, from its very nature, every attempt to measure it by time and place, its pathological results—the sole point, moreover, in which we are interested—do not escape verification by practical men. But general observation proves that in the country, beyond a circle of from fifteen to twenty leagues round the large cities, syphilis is extremely rare. In a

given canton it is, almost from time immemorial, unknown, especially among the women. If it commence in a household, it is almost infallibly through the husband. Well, in the midst of this calm, which the medical man can, at need, certify, syphilis breaks out in a family; and, what is still more remarkable, it passes from the children to the husband, and to the neighbors' children! But inquire into these unfortunate cases, and you will always find, without difficulty, that a strange child has been suckled by the woman who was the first victim of this sort of epidemic. Must we, then, assume a constant fatal coincidence, which nothing explains, which everything tends to refute, between the functions of lactation and an immorality previously unknown?

c. Have, on the other hand, the numerous causes which make the *opportunity* of contracting venereal disease so rare for these women, been taken into account? Without alluding to the respect, appropriately increased by a little disgust, with which the condition of nurse inspires every one, is it not well known that nothing destroys more than repeated suckling the freshness and youthful appearance, advantages which the resources of coquetry do not understand replacing in this class, and in the absence of which *venus friget*, still more in the country than in the cities? Moreover, their condition as nurses being for them a profession, and that the most lucrative as well as the most convenient, would they willingly expose themselves to the chances of a pregnancy, which would deprive them of this precious means of subsistence? And would not the same consideration restrain—if not all the lovers which a too courteous theory so generously grants them—at least their husbands?

I have lately had (November, 1853) an opportunity of verifying in the mass all that is well founded in this remark. My colleague and friend, Potton, meeting me one day on the way to l'Antiquaille, informed me that he had at that moment in his hospital practice a real treasure for the cause which I advocate. Having entered by his invitation, I had the opportunity of taking in at a glance the most perfect collection of hideous and loathsome creatures, all, however, nurses, and subjects of symptoms of constitutional syphilis supervening during the lactation of infected children. Although only twenty-eight, thirty-two, thirty-three, thirty-four, thirty-six, and forty years old respectively, these six unfortunate women (of whose cases I possess the notes taken by Carier, the house-surgeon) had every appearance of fifty. Assuredly, in the face of such repulsive objects, the suppositions of our opponents would become the most flattering, but also the most improbable gallantry![1]

[1] Putegnat (Journ. de. Méd., de Chirur., et de Pharm. de Bruxelles, 1853, p. 26) gives a still more striking aspect to this argument. In speaking of a nurse infected in this manner, he says, "Apart from his morality, where is the man who would have dared or been able to forget himself, even for one poor moment, with her, so lank, so repulsive from her ugliness and filth?"

D. The *seat* of the first symptoms which present themselves inspires me with still more distrust of the opinion which refers their origin to a primary chancre. As a general rule—apart from all theory—it is almost always in the mouth of the child and on the breast of the nurse that they are first observed. But how are we to explain this frequent appearance of primary chancres in these two situations? I know that the child may have contracted them *during labor*, or by impure kisses. I know that Ricord has seen a nurse take chancres on the nipple from the well-meant aid of a person, herself the subject of chancres in the mouth, who had offered to unload her breasts by means of suction. But such instances have only the value of those rare cases which are registered in the annals of science to render diagnosis more circumspect, by showing what unexpected difficulties may accidentally occur. They cannot—without a tendency to that generalization of which the public mind appears to me to grow more and more unwilling to become the accomplice—pretend to furnish the sole explanation of all the facts of this kind. And there is not, I believe, a single practitioner who will not open his eyes and guess on which side the exaggeration lies, when he is told that, to deny the transmissibility of constitutional symptoms from the child to the nurse, it must be admitted that, in every case in which it is believed that syphilis has been propagated from one to the other, the suckling had contracted a primary sore in the mouth, or the nurse had contracted one on the breast, independently of lactation.

E. Another not less serious difficulty exists. A primary chancre, especially one which has conveyed infection, and, above all, one which has not been treated specifically, *leaves visible traces.*

Ricord will not be the one to dispute this principle, he who has so well shown the significance of induration, and regards its presence at the base of an infecting chancre as an absolute law. But what most frequently happens is this: a child is intrusted to a nurse, and the parents, although formerly diseased, are honest. They would not have given it to her, neither would the nurse have accepted it, if it had been supposed to contain the germs of syphilis. On both sides there is no alarm, so much the more since the symptoms do not generally present themselves in the child until after a lapse of some time. Even when they appear, nothing having as yet awakened any suspicion, their syphilitic character almost always remains unrecognized. The same holds good for the first symptoms which appear in the nurse; and it is not until mucous patches, roseola, and pustules break out that she becomes alarmed, and consults a medical man. Thus it is correct to say that the symptoms earliest in date, whether in the child or in the nurse, have almost always remained without treatment. Now the reasoning which I adopt, and which appears to me irresistible, is this: If the lesions were primary chancres, we should, on being called

upon to examine the places they had occupied, find in them cicatrices with the characteristic induration. But nothing of this kind occurs. If they are healed, the spot where they had existed differs in no appreciable way from the neighboring parts; and if they still exist at the time, it is not a chancre that is met with, it is most generally a mucous tubercle.

To this latter argument the school of which I am speaking has its answer quite ready; an answer based, I admit, upon an appreciation, as exact as it is ingenious, of the phases which chancres may run through to pass from the state of a primary sore to that of a secondary lesion. "The chancre," they say, "becomes transformed *in situ* into a mucous tubercle, so that, when the observer comes somewhat later (and I confess that this is most commonly the case with the transmission of syphilis to nurses) he finds only a mucous tubercle where, a few days sooner, he might have verified the presence of a primary chancre." I repeat that I admit the exactness, and comprehend all the practical bearings of the observations made by Ricord upon this subject previously unnoticed. But, in this special case, his too absolute application of them gives rise to some grave objections. I am not speaking of the boldness required to maintain that the observer has *never* arrived in time to see the chancre otherwise than metamorphosed.[1] And yet, the remark which I am making has all the more force because every case of this kind would necessitate, for the explanation of the above theory, that the observer *should overlook at once two chancres*, one on the child, the other on the nurse; two chancres originating not simultaneously, but successively; two chancres implanted in structures entirely different; which could not both have passed away without leaving some appreciable traces behind them.

But there are other still more conclusive considerations against the exclusive interpretation of transmissions from suckling to nurse by the transformation of a chancre *in situ*. Thus:

According to Ricord, every primary chancre which has caused infection must have been an indurated chancre.

But I, on my part, say that a chancre which becomes converted into a mucous tubercle is very certainly an infecting chancre, since it furnishes on the very spot itself the proof of its properties in this respect. Consequently, such a chancre must be an indurated chancre.

If then, at the spot where the nurse asserts that her disease, which has ultimately become general, commenced, we find no induration—if we find none although no mercurial treatment has been employed—may we not, opposing the authority of Ricord himself to the too explicit conclusions of his hasty supporters, ask them upon what they found their assertion that a chancre has existed in that situation?

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[1] I quote further on (see p. 162) cases in which the examination was made a month and even only three weeks after the first appearance of the lesions.

F. The *suppurating bubo* is almost entirely wanting in the list of symptoms of congenital syphilis. Does not this furnish a strong presumption that chancres are not so common, at an early age, as is contended? It will be answered: "If suppurating bubo be rare in children affected with constitutional syphilis, it is precisely because the chancre which produces the syphilis is not accompanied by suppurating buboes." The proposition is exact, but is not an answer, for I have only asked—Why, in children, if they be so subject as they are said to be, to contract primary chancres, do we never see these chancres produce suppurating buboes? Are they then condemned, when they thus contract a chancre, always to have an infecting, that is to say, an indurated one? This would indeed be ill luck; but even this would not decide the question against me. For if these chancres are all indurated they ought all to leave visible traces. But I should then repeat the question already put: Do we very often find, in these cases, well-marked indurations?

G. The *progress* of the disease and its *high degree* of contagiousness furnish so many further signs of separation between the syphilis of nurses and that of adults generally, and consequently authorize us to attribute it to a different origin. Sometimes, it is true, the first lesion, that of the nipple, long remains the only one. But in many cases, on the contrary, it is seen to be followed, almost immediately, by constitutional affections; these break out in different parts of the body without a period of incubation or latency having preceded their development, as is the case with a primary chancre. Lastly, there is not so long an interval between the secondary and tertiary phenomena as in adults generally. This is not, however, I admit, an important difference. Far be it from me to attempt to maintain that all the manifestations are here confounded and the order of their appearance reversed. No; I merely wish to state that we observe a more early and rapid succession of the ordinary phases of the disease.

It is especially in persons *mediately* infected by the nurse that this more rapid course of the symptoms is met with. Striking instances of this kind will be found a little farther on.

H. As regards the *contagiousness of this congenital poison*, unless we assume gross, constant, and unanimous misconception on the part of all the writers who have related instances of it, it appears equally fearful and incontestible. I have already shown above (see p. 127) that this property may very reasonably be regarded as one of its prerogatives. But here—a very rare occurrence among the facts which induction ingeniously essays to predict—experience exceeds the previsions of theory. All observers have pointed out the propagation of the symptoms by the slightest contact from the new-born child to the nurse, or from her to her children, her husband, her relations, and her neighbors of all ages; so that it is not un-

common to see two or three families victims to the presence of a single syphilitic suckling. Having witnessed these evils, several medical men have even exaggerated the consequences which may legitimately be drawn from them, by supposing that this special poison increases gradually by its own progress. The most enlightened, and without doubt one of the least enthusiastic, the learned Colles, writes thus:[1] "The members of the nurse's family may also contract the disease, and more easily than she; for this disease seems to acquire more force the farther it becomes removed from its first origin."

Inoculation has shown, in the hands of Sperino, the contagious property of the congenital poison, existing even at its second transmission, that is to say in a nurse who had taken it from a new-born child infected hereditarily. This is the interesting case which I translate literally from the work of our learned and conscientious fellow-laborer at Turin:

D. Gioanna, married, thirty-five years old, of lymphatico-sanguine temperament and good constitution, entered the syphilitic institution January 15, 1851, with ulcerating mucous tubercles on the nipples. She had taken them, two months previously, from a child which she had taken to nurse from a cook in that city. At the end of six weeks of suckling the child died of marasmus, covered with an eruption the character of which the nurse could not recognize. Before its death, some papulæ had appeared upon her nipples to which she did not pay any attention at the time. This woman had not had any venereal disease previously.

On January 17th, some pus taken from the mucous tubercles on the breasts was inoculated on her right thigh, at two points, with a needle[2] which had not been employed for a similar purpose before. On the 23d—six days after the operation—redness appeared at the points of inoculation, accompanied by itching. On the 24th, two small papulæ had risen up at the centre of the red circles which had appeared on the 23d. On the 20th, two fresh inoculations were effected on the left thigh with the pus of the ulcerating tubercles on the breasts. On the eighth day redness appeared at the points of inoculation; and on the following day two papulæ were observed there.

On January 20th, the papulæ developed as the results of the inoculation of the 17th were covered with a thin crust, on the removal of which a superficial erosion was observed. The small quantity of pus secreted there was carefully collected and two points upon the left thigh inoculated with it. Seven days after this inoculation two small tubercles developed themselves at these points. The mucous pustules produced by these various inoculations continued about twenty days, counting from the date of their appearance. They died away spontaneously, without either general or local treatment, leaving on the part which they had occupied a copper-colored mark, but without any cicatrix.

The tubercles on the nipples, dressed with Labarraque's liquid, also gradually disappeared, leaving marks of the same color as those upon the thighs.

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[1] On the Ven. Dis., 1837, p. 285.

[2] This instrument, which Sperino uses by preference, is a lancet-shaped needle a millimetre and a half broad, with a groove running its whole length.

On February 25th, there appeared upon the upper and lower extremities and upon the trunk numerous copper-colored papulæ, from two to three millimetres broad, without pain or itching, which were diagnosed as a papular syphilitic eruption. It was proposed to allow this eruption to develop itself freely, before commencing mercurial treatment, when, on March 2d, acute iritis of the left eye supervened, which called for energetic antiphlogistic treatment. After having subdued the acute condition, recourse was immediately had to mercurials, both externally and internally, and on April 15th, the woman Gioanna left the hospital cured.[1]

1. As regards arguments drawn *from clinical experience,* nothing would be more easy for me than to multiply facts in support of this view. I shall quote three only of the best authenticated and most conclusive on account of the veracity and perfect competence of those by whom they have been observed.

In March, 1844, Petrini treated an illegitimate child which had been intrusted to a country nurse. Its parents had remained unknown; but it was ascertained that its mother had had constitutional syphilis when she gave it birth. Very weak and ill-developed, this child soon became affected with ulcers in the mouth and throat, and with copper-colored spots on the whole body. It died at the age of three months. The nurse accusing the bad quality of her milk of being the cause of the wasting away of her foster-child, frequently gave it to two of her friends to suckle, two sisters, who were also nursing. After a little while they both presented ulcers on the nipples, then on the genital organs, with periosteal pains. They communicated ulcers to their husbands. At last, seeing that their own children, previously healthy and robust, began to get weak, these two women requested Petrini to examine them. The latter, convinced of the morality of his two patients, had no difficulty in ascertaining the origin of

[1] La Sifilizzazione studiata qual mezzo curat. e preserv., Torino, 1853, p. 25. I have suggested already that the congenital poison possesses, in my opinion, a high degree of contagiousness. A recent fact, the exact counterpart of that of Sperino, will furnish us with the experimental demonstration of this theorem. In the beginning of February, 1854, Rodet, my present successor at l'Antiquaille, inoculated fluid taken from mucous tubercles at the angle between the penis and the scrotum. The inoculation was first effected in the thigh of the patient himself, a young man who had had, a short time before, a primary chancre; then in the thigh of another individual, the subject of cancer but free from syphilis. Several punctures were made in each subject and a piece of linen soaked in the same fluid was left for some hours on the places, the greatest care being taken to protect the part from everything which could have furnished a mechanical impediment to the success of this therapeutical experiment. At present, two months and a half after the day of inoculation, nothing of a syphilitic character has appeared, either in the one or the other, at the points of puncture or elsewhere.

Combined with other actual proofs collected by Ricord, and compared with Sperino's preceding case, this observation proves, as it appears to me, the vast difference which distinguishes the same lesion, in relation to its contagiousness, according as it springs from a *congenital* or a *chancrous* source, since we see the success, in the hands of the Turin practitioner, of the inoculation by the lancet of a fluid which, when it is taken from a sore similar in appearance but dissimilar as to its origin, furnishes Rodet with a negative result only.

the disease. The children of these two women, in spite of the remedies employed, sank under the effects of ulcers in the mouth and throat, and of deep-seated tubercles. The two husbands were cured by a simple local treatment. As for the two mothers, the one was cured by Dzondi's mode of treatment; the other was treated in the hospital of St. Jaques, at Rome, where she had an attack of iritis which deprived her of the sight of one eye. The nurse herself remained intact in the midst of this fearful propagation of symptoms. Petrini convinced himself, after a period of two years, that she had never up to that time had any syphilitic affection.[1]

The second case will show us the extension of this transmission assuming the proportions of a genuine epidemic.

A foundling in Brussels was placed with a woman named Hauwaert, at Alsemberg. After some time she had an affection of the breasts, and as they were distended she had them drawn by her son, who was ten years of age. He succeeded so well in this that several other women, having occasion to take advantage of his talent, applied to him for the same service. Several of them became infected in this manner, among others a woman named Demol, who contracted ulcers on the breasts. Being herself nursing, she communicated to her child, which was being suckled by her, excoriations on the lips and in the mouth. Being ignorant of the nature of these ulcers, she accidentally gave the breast to the child of her sister, named Deraw. A short time afterward this latter child had chancres in the throat and venereal pustules on the body; the mother also had chancres in the throat and on the breasts, and moist pustules in the vulva and about the anus. Her eldest daughter, having put into her mouth the spoon with which she had been giving some broth to her young brother, also became infected, and contracted ulcers in the throat. The husband, having cohabited with his wife, became affected with flat pustules and a chancre in the throat.

Seutin, passing through this commune, and informed of the disease which was preying upon several of the inhabitants, submitted all the persons infected to a strict and minute examination. He concluded from it that the author could be no other than the boy Hauwaert, the victim, as well as his mother, of the foster-child brought from Brussels. And, in fact, when this boy came to be examined, he was found to be the subject of a vast indurated chancre in the throat, and of a perforation of the palate, the consequence of an eroding ulcer.[2]

Joly, after having related this history, adds (in the same *Journal*, 1823, p. 316), "I have narrated these facts from the account given by the members of council of hospitals themselves. All this had been verified by an inquiry instituted by them."

A soldier having returned home, relates Dr. Facen,[3] communicated syphilis to his wife. She became the mother of a child, which presented, a few days after birth, symptoms of the same disease. It had, especially, ulcers of the mouth, and died.

The nurse to whom it was intrusted contracted the same disease from it and could only be cured by mercury. A child which she was suckling

[1] Il Raccogl. med., July number, 1850.

[2] Journ. de Méd., de Chirur., et Pharm. de Bruxelles, 1853, p. 92.

[3] Gaz. méd. Lombarda, May number, 1849.

also became infected, and was in great danger. The mother of this child soon presented signs of very intense constitutional syphilis. A young girl of eighteen, who had had the care of this latter child, had, in consequence of her relations with it, pustules first about the mouth, then in the vulva. Her health was restored by mercury.

The mother of the second child had taken another foster-child. The disease developed itself in it, and it infected its sister, a girl of ten years of age, who attended to it, and who, probably from kissing it, presented symptoms, first about the mouth, and then on the genital organs.

The mother of these last two children, aged fifty, having had much intercourse with them, had herself symptoms, for the cure of which anti-syphilitic treatment was necessary.

Thus a single child sufficed to infect seven persons, directly or indirectly, and most seriously!

I am aware how much carelessness, want of cleanliness, and ignorant feeling of security, frequent and close contact, may have acted in such cases to multiply the transmissions. But in spite of all these circumstances I cannot refrain from putting this simple question once more to those who deny the communicability of congenital syphilis: Is this rapid and extensive propagation of the disease, which is almost certain when an infant at the breast is concerned, very often met with when only one of the primary chancres of adults is the first source?

I expect to be answered that a man affected with chancre knows the danger of contagion, and does not expose to it those who approach him; that he is not brought into necessary and constant relation to them like the nurse; that he may live and be treated apart; in a word, that the sole cause of the great frequency of these transmissions lies in the very nature of the contacts which the cares of nursing require, and not in a difference of the lesion which is the agent of them.

This is more than a mere specious objection; it has a real value. And although it has already been discussed incidentally in the course of the preceding considerations, it merits a more direct investigation. I shall answer by two observations to the argument contained in it, which will suffice, I think, to prove that, in some cases at least, it is not a chancre, but a lesion very evidently secondary, which has been the starting-point of the affections transmitted.

A woman of very correct habits, whose husband was equally irreproachable, took a child of seven weeks old to nurse, in December, 1843. Eight days after, the thighs and buttocks of this child became covered with a syphilitic eruption. At the end of two months the mouth began to present symptoms of the same kind.

The woman, continuing to suckle it, had a fissure in the breast a few days after the mouth of the child had become affected. The fissure continued to enlarge, and when she was admitted into the hospital, June 1, 1844, there was an ulcer at that spot as large as a plum-stone, with irregular and somewhat everted edges. Egan inoculated the pus from this

ulcer under the skin of the arm. The patient complained of pain in the throat, but no ulceration could be discovered there. The child was treated and cured by mercury.

On June 17th the ulcer on the breast was rapidly decreasing in size. The inoculation of June 1st had not produced any result.

The patient went out June 30th, cured of this ulcer; but a short time after an eruption of copper-colored spots appeared, then pustules upon the buttocks and thighs, and condylomatous tubercles in the vulva. Treatment with iodide of potassium removed these symptoms, but she afterward suffered a fresh relapse in the form of ulcers in the throat.[1]

Here inoculation, the best criterion, showed that the ulcer communicated to the nurse was not inoculable by the lancet; therefore it was not a chancre. But, it will be objected, this fact, very conclusive in one sense, is absolutely without value for the elucidation of the theory you advance. It proves, we admit, that this ulcer was of a constitutional and not of a primary character. But who assures you that the nurse had not herself contracted syphilis in the usual way, and that this ulcer was not, in her, the consequence of a primary chancre which had existed previously? This distrust is severe, but it will not appear excessive to any one who knows how cautious it is necessary to be in admitting proofs of this kind. Fortunately I am in a position to satisfy it by the relation of a second case in which the most vigilant control was exercised over the nurse both before and during lactation.

Mr. P—— communicated a chancre to his wife while she was pregnant. Baumès,[2] being consulted, treated both with Van-Swieten's drops and sudorifics. Mrs. P—— had, nevertheless, copper-colored papulæ on the forehead and ulceration of the tonsils. She was afterward delivered of a child which, healthy at birth, was given to nurse to a servant who had been seduced and had gone into an institution to be delivered. Baumès examined this woman before the child was intrusted to her, and found no signs of venereal disease either on her genital organs or on any other part of her body. She was carefully watched, and did not go out except with the mother of the child. Eighteen days after birth, the child had spots on the buttocks, chest, and cheeks, in the centre of which there appeared a pustule which terminated in a round ulcer, having every appearance of syphilitic ecthyma. The nurse continued healthy for twelve or fifteen day, but some irregular-shaped ulcers, with a grayish base, then appeared around both nipples; a similar ulcer invaded the commissure of the lips; flat tubercles (moist pustules) manifested themselves at the anus, and furfuraceous copper-colored spots on various parts of the skin.

Treatment by baths of bichloride of mercury, to which was added, for the nurse, the administration of Van-Swieten's drops, cured them both.

Cullerier (see p. 182) was able to verify the healthy condition of the breasts and genital organs of the nurse *eight days* before the syphilitic

[1] Dublin Quarterly Journal, 1846, p. 337.

[2] Précis théor. et prat. des Mal. vénér., t. i., p. 169.

symptoms, which she had contracted from her foster-child, appeared on her.

In other cases, not less conclusive, it is not *before* the appearance of ulcers on the breasts, but *immediately after their commencement*, that the genital organs of the nurse have been examined, without any traces of the primary chancre having been found which the opponents of congenital transmissibility assume necessarily to have existed there. Bardinet has largely contributed to clear up this truly important side of the question by numerous observations conducted with every possible care. I shall quote one, less for the purpose of bringing forward in support of my view material proofs which his just reputation for veracity renders superfluous, than to give the reader an idea of the manner in which he has proceeded in this very delicate investigation.

A woman named R—— took a child to nurse for the first time on April 19, 1845: she kept it thirty-five days, and then, after having restored it, in a healthy condition, to its mother, took a second on May 24th. Healthy at first, this latter child had, at the end of fifteen days, redness on the scrotum and about the anus; ten days later, large pimples appeared upon its whole body; lastly, toward the end of June, it presented an ulcer of the upper lip, which, in spite of cauterization, persisted and continued to enlarge.

The nurse continued to suckle it, and about July 8th or 10th observed an ulcer upon her left breast; on July 16th, having no longer any doubt as to the cause of her disease, she sent the child to the Limoges Hospital.

Bardinet and Dr. Bleynie examined it together, and found that it had: 1st, a large ulcer on the upper lip; 2d, small dry pustules on the face; 3d, copper-colored spots and small ulcers covered with a crust: the last two lesions were distributed over the whole surface of the lower half of the body. The ulcers gradually increased in size and depth, and the child died on July 28th.

Wishing to ascertain the condition of the nurse as soon as possible, and by direct examination, Bardinet went to the place where she was living, on July 31st, accompanied by Dr. Tuilier, head physician to the Limoges Hospital. They there began by examining the nurse as well as her husband; neither of them had, about the mouth, or throat, or genital organs, or elsewhere any recent ulceration, or any trace of old ulceration; the husband had, however, several times had connection with his wife since the ulcers had appeared on her breasts; the nurse had not even leucorrhœa, or any inflammation of the vulva; at that time, the breasts were the only parts affected; there existed upon them some grayish ulcers, having well-defined edges, round the nipples.

To verify their nature more completely, Bardinet caused these ulcers to be dressed with simple cerate only, for a month, without any internal treatment. They grew worse and increased to double their former size.

Having then entered the hospital on September 1st, she was treated with mercury externally and internally; but at the end of three days her vulva became covered with mucous patches. On September 21st, thanks to the continuation of the treatment, they, as well as the ulcers on the breasts, were beginning to yield. On October 15th this woman went out

cured, but was advised to continue the treatment. She returned in two months, the neglect of this advice having caused an eruption of copper-colored spots, of tubercles on the hairy scalp, and a large ulceration at the back of the throat. Strict and long-continued treatment was required for the cure of these affections.

In a woman, named T. H——, infected by her foster-child, and who afterward infected her own child and another foster-child, Joly, although a still visible cicatrix on her breast showed, conformably with her own declaration, how the poison had reached her, wished to complete the certainty by an examination of the husband, which, he informs us, furnished negative results only.[1]

Lastly, Bergeret,[2] still more favored by circumstances, had the opportunity of examining a nurse and her husband three weeks after the appearance of pustules and ulcers on the scrotum, perineum, buttocks, and thighs of a strange child which she was nursing. In spite of a minute examination, it was impossible to find in either of them the least apparent trace of venereal disease. By the advice of a medical man, who affirmed that she had nothing to fear, this woman continued to suckle the child, but ulcers appeared upon its lips. The nurse then contracted ulcers on both breasts. Later on, she had some in the mouth and vulva, and a mercurial treatment of two months' duration was required for her cure.

It was, probably, some similar facts which suggested to Ricord these words, the exact and most recent expression of his view, but too often parodied or exaggerated by careless or over-zealous transcribers: "Remark well," he says ("Lettres sur la Syphilis," p. 170), "that I do not absolutely reject this mode of transmission from the foster-child to the nurse and from the nurse to the foster-child. I only say, without leaving the field of strict observation and of the exact analysis of the facts, that the existence of this mode of transmission is not yet proved."

I congratulate myself and feel honored by agreeing with my teacher and friend in such terms; for I have no difficulty in acknowledging with him that, among the clinical facts advanced in proof of this mode of contagion, there is not one which is thoroughly demonstrative: there is not one in which the daily observations of the symptoms, on the one hand in the nurse, her relations, and those around her, on the other in the child, its *fathers*, and mother, renders it evident that symptoms really constitutional have passed from one to the other. Only—and in this I regret to differ from Ricord—I am inclined to think that if the *conclusive fact* be wanting, *probable facts* abound, and that to such an extent as to make up, by their number, for the absence of the former. I feel again called upon to point out that the circumstances under which they have been collected plead strongly against the signification which Ricord has felt justified in giving them. Lastly, and especially, I cannot refrain from remarking that, if there be a doubt, the safety of families would be far better consulted by

[1] Journ. de Méd., de Chirur., et de Pharm. de Bruxelles, 1853, p. 611.

[2] Moniteur des Hôpitaux, December 3, 1853, p. 1157.

my solution than by that toward which he leans; since, if the latter were erroneous, the adoption of it would become the source of fearful disasters; the former, if it be false, having no other disadvantage than the imposition of some superfluous precautions.

It has been sought to decide the question in a different manner. The cases in which the suckling of an infected child has been effected without the nurse becoming diseased have been quoted. And from these observations, brought forward by Ricord, Cullerier, Chailly, and Bassereau, the distinct conclusion has been drawn that the contagiousness of congenital affections is a chimera! Among the *satisfied* to whom I am alluding, Maisonneuve and Montanier deserve to stand in the first rank; for, after having quoted the observations of Cullerier, they declare, on two separate occasions, "that they leave no doubt . . . that doubt is no longer permitted." [1]

For my part, I shall only invoke a principle raised by unanimous consent to the rank of a law, by calling to mind that, in questions relative to contagion, negative facts are never admissible, except as simple presumptions. Of twenty persons who visit an individual affected with small-pox, fifteen, at least, escape contagion. Is the contagion to be denied on that account? Three young men expose themselves with the same person, under conditions apparently perfectly identical; two become victims; the third continues healthy. Will it be asserted that blennorrhagia is not transmissible? Will artificial inoculation itself, in which all the circumstances favorable to the success of the operation are at the disposal of the experimenter, never fail? And could the non-contagiousness of the pus of a chancre be inferred from its rare failures? Certainly not; for we recognize that, as regards transmissions from one individual to another, the result is subject to certain elements which can neither all be known nor all combined in one experiment; and, in spite of the reassuring example of a danger incurred three or four times with impunity, we certainly should not dare to ensure against all risk the imprudent person who exposed himself to it for the fifth time.

But let us, as is very necessary, examine more closely these observations, which furnish so strong an argument in the opinion of some writers on syphilis. I am astounded when, after having read their conclusions, I examine the bases upon which they rest. These facts related by Cullerier, *which allow of no doubt*—which ought, it is said, greatly to counterbalance the thousand histories of infectious lactation daily furnished by experience—these facts are *six* in number! (*Union Médic.*, April, 1854.)

Independently of their small number, a first and very weighty objection to the signification given to them, I take two other exceptions to these observations.

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[1] Op. cit., pp. 380 and 381.

In the first place, three only of these children had syphilitic lesions of the mouth.[1] Is it, then, surprising that the other three could not become the cause for their nurses of an infection which, apart from cases altogether exceptional, only acts by the contact of the nurse's breast with a mouth ulcerated either in its cavity or its circumference? And as regards the three nurses who resisted the contagion in spite of the presence of buccal symptoms in the children, analogy, as well as the most simple reason, explains this accidental immunity. Whether from the effect of a closer texture of the nipple, or from that of ointments and ablutions (which no one, not even Cullerier, could blame them for having employed freely under such circumstances), they will have succeeded in keeping the inlet for the admission of the poison closed; and their immunity does not surprise me any more than that of the man who, thanks to a more resisting epidermis, or from the effect of cleanliness, comes out unsoiled from the same place in which his immediate predecessor had contracted a chancre.

Two of the facts already quoted in the course of this work may throw light upon this subject. Vassal mentions a nurse who, while suckling a child which was covered with tubercular pustules, contracted the disease in the form of pustules on the *labia majora*. "Her breasts," he says, "were sheltered from the infection, although the child had chancres at the commissures of the mouth."[2]

Is not this an exact repetition of the three cases to which Cullerier takes exception, without, I believe, having sufficiently reflected upon the objections to which they give rise? The nipple remained intact in the case of this nurse, as in his; and it is very probable that, if some mediate touch had not eventually brought her vulva into contact with the fluid poured out by the pustules of her foster-child, this would have been regarded as an additional negative fact. Upon what, then, do such cases of exemption depend? Nothing shows it better than this example—upon the

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[1] A great number of facts brought forward as proofs of the non-contagiousness of these affections equally apply to foster-children who, although syphilitic, had no disease of the mouth, and remained free therefrom during the whole time of suckling. Can we be surprised, then, that contagion had not occurred under such circumstances? Bardinet has rendered a true service to science and to practice in showing that, most frequently, congenital symptoms commence in the new-born child at the genital organs or anus, and do not attack the mouth until later. He has also quoted striking instances of lactation remaining without danger so long as the mouth of the child continues intact, and becoming infecting so soon as symptoms manifest themselves there, then ceasing to be so when the mouth was healed, although evident syphilitic lesion still persisted at the time on other parts of its body. The late appearance of symptoms about the mouth deserves to be pointed out to the practitioner. He will find in it both a hint not to assert the certain harmlessness of lactation commenced under favorable auspices, and the propriety of allowing a syphilitic child to take the breast so long as the disease has not attacked its mouth.

[2] Mém. sur la transm. de la Mal. vénér., p. 50.

chance circumstance of an unusually firm structure of the nipple, and upon the accidental or preconcerted absence of all relations with the diseased organs of the foster-child.

Petrini's case, quoted above, shows still more clearly the efficacy of this cause of immunity. To supply the place of its usual nurse, two women occasionally gave the breast to an infected child. They both contracted the disease, while the usual nurse escaped it, and Petrini asks himself why the latter remained intact! I presume, for my part, that, warned by the progress of the symptoms (and perhaps by some information concerning the antecedents of the child), she knew what to think of their nature, and took precautions against the danger, while her friends, less apprised, went on suckling without adopting the prophylactic measures usual in such cases.

Such also, I suspect, is the true reason of the negative facts collected by Cullerier. Experiments, especially when they are opposed, like his, to a strong prejudice, are not submitted to by the ignorant and timid persons who are the subjects of them so passively as is generally believed. And when we consider the disgust they would inspire, the fears which they must occasion for the nurses, and the active co-operation which, to be carried out strictly, they require on their part, it is not easy to foresee the deceptions which they must have practised to evade the performance of them, and the resistance, or at least the indifference, which they brought to the fulfilment of the conditions?

My second objection might have allowed me to dispense with the first; for it suffices to nullify these experiments of Cullerier. In fact, it is formally specified in his work that, in the six observations which I am now examining, it was a question "of infected children whose nurse-mothers had remained healthy." This single expression *nurse-mothers* decides the question. For if it is proved that a syphilitic child cannot communicate the disease by lactation *to its own mother*, it becomes evident that, for the proof of the non-transmissibility of congenital affections to the nurse, Cullerier has selected the very nurses who were inapt to contract these affections. But this privilege of the nurse-mother really exists; and as it constitutes at the same time one of the most interesting points of this study, I shall be excused for explaining it at some length.

Colles[1] was the first writer who, in 1837, proposed as a constant rule the observation that "a new-born child affected with congenital syphilis, even although it may have symptoms in the mouth, never causes ulceration of the breast which it sucks, if it be its mother who suckles it, though continuing capable of infecting a strange nurse." Baumès made the same remark in 1840, which he expressed in these terms: "A mother having carried in her womb a syphilitic child, whose affection is due to the semen

[1] On the Vener. Disease, p. 385.

of the father, does not, in general, contract venereal disease from suckling that child, as a strange nurse might do." [1] Egan, in 1846, confirmed the reality of this observation by personal experience.[2]

This rule is conceivable, and might easily be predicted from the data of the theory alone; for it is nothing else than one of the applications of the law of *oneness* of constitutional syphilis. If it be constant that syphilis never declares itself twice successively in the same individual, a woman who has given birth to an infected child is, from the sole circumstance that she has already had the disease herself, incapable of again contracting it from that child. I say that she has had it herself. In fact, this child can only have received congenital syphilis from its father or its mother. If from its mother, what I have advanced is proved without going any further. And if from its father, then the infecting influence of the fœtus upon its mother finds (independently of other reasons which confirm it), in the inaccessibility of the latter to contagion from suckling her child, one of the most powerful arguments that could be desired. For this inaccessibility is not a mere hypothesis; it is a result of experience, established by the assent of the reliable authorities I have quoted. And if the theory explain this inaccessibility, the latter in its turn serves as a proof of the theory; while this perfectly logical reciprocation between a rational prevision, which borrows from experience the means of passing to a state of reality, and an actual fact, which only appeals to reasoning for its explanation, cannot be put down as an argument in a vicious circle.

Exceptional cases are nevertheless met with in authors. Anxious to ascertain myself the value of *Colles' law*, I have sought out these cases, and convinced myself that they contradict it in appearance only. The succinct analysis of each of them will suffice, I think, to impart this conviction to the mind of the reader; and it may serve, at the same time, to show clearly within what limits I purpose to confine the application of the principle itself.

In the first and most numerous class, the course of things is this: A mother who is suckling her child accidentally intrusts it to another nurse who is diseased. The child contracts the disease from the latter and then communicates it to its own mother. The case related by Ambrose Paré is an instance of this mode of transmission. In that by Facen, quoted above, it is in the same manner that syphilis developed itself in the mother of the child, which had been infected by the nurse of the first child, the cause of all the evil. Bertherand [3] saw a lady, the subject of most marked secondary symptoms from having carried to her lips the spoon of her child, which had contracted syphilis from a nurse, herself infected by a strange foster-child. Lastly, Bertin [4] also speaks of a case of transmission from a child

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[1] Précis théor. et prat. des Mal. vénér., t. i., p. 180.
[2] Dublin Quarterly Journal, May, 1846.
[3] Op. cit., p. 335.
[4] Op. cit., p. 77.

to its mother. But, from information obtained, and from the nature and progress of the lesions, it is certain that the child had contracted a primary chancre, out of its home, with suppurating bubo, symptoms which might well render it capable of contaminating its mother, who had previously been healthy. All authors, however, have taken the same view of these cases as I do here.

In all these instances, the exception to the rule established above is evidently unreal. The mother was not previously diseased. It was neither from her nor from her husband that the child received the infection. No condition of immunity, then, was possible for her ; and she contracted the disease absolutely as any other person might have done who had intimate and frequent relations with an infected child.

A second class may be formed of the women who, suckling their own children, become infected without the latter having presented any symptoms.

Cusack [1] saw a child which had symptoms of constitutional syphilis. Its mother, who suckled it, contracted an ulcer on the nipple. So stated, the case would appear to offer a flagrant infraction of *Colles' law*. But on inquiring closely into the successive concatenations of the circumstances, the author learnt that the child had incidentally been suckled by another nurse infected with syphilis ; the mother said further that it had not had ulcers in the mouth until after she herself had had some on her breast.

The child, therefore, had in this case been, for the mother, the agent of this mediate contagion, the mechanism of which has only been well studied in our days by Ricord and Cullerier, but which Catanée [2] had already alluded to positively. It communicated syphilis to its mother ; but only because none of the causes which Colles had in view existed in her to render her refractory to the contagion proceeding from her child.

In the third class, I place two cases in which the nurse-mother and the child both presented constitutional symptoms. It appeared then that the latter might have furnished the source of the disease.

But on further inquiry, it was ascertained that the symptoms had not appeared in the child until after they had shown themselves in the mother.

Veré-Delisle [3] saw a woman, three months after delivery, and who was suckling her child, contract syphilis characterized by ulcerations within the *labia majora*. Her child "*soon* had" venereal pustules and ulcerations at the margin of the anus. It was cured by the indirect treatment.

Mrs. N——, of irreproachable habits, says Viani,[4] returned from Egypt to Italy, to her husband, in 1838. She was delivered of a child, which she

[1] Dublin Quarterly Journal, 1846, p. 337.

[2] These are his words on this subject: "Quarta causa poterit esse coitus cum sanâ cum quâ de proximo coïverit infectus, semine adhuc in matrice existente."

[3] Arch. gén. de Méd., April No., 1830.

[4] Gaz. méd. Lombarda, January, 1849.

suckled at first. Syphilitic ulcers appeared on her nipples, although she was ignorant of being the subject of this disease. She then gave the child to a nurse, who was soon attacked, as were a second and a third, by well-marked syphilitic symptoms.

As it is not mentioned that the child had presented symptoms before its mother, it appears extremely probable to me that the disease proceeded from the latter, and that she had contracted it from her husband, whose habits, *less irreproachable* perhaps, had doubtless not been able to withstand the prolonged absence of his wife. In these two cases, therefore, it appears very probable that far from receiving the infection from her suckling, it was the mother who communicated the disease to it. We shall see further on (Part IV., Medico-legal Bearings) an observation borrowed from Bardinet, in which a mother, who at first accused her own child of having infected her during lactation, afterward confessed that it was in herself that the disease had, on the contrary, commenced.

Lastly, this rule, like every other, must have its exceptions. The following observation by Cazenave is the only one which I have met with. And even here it may be asked whether the symptoms in the mother were not due to an infection proceeding from her husband, and whether, consequently, their appearance after those in the child was not an accidental coincidence rather than an effect connected with its cause.

A woman named C——, aged thirty, had never had any appreciable primary symptom. Her husband had been infected, and her last child, which she had suckled, died of an eruption which the mother described as similar to that of which she had been the subject at the time of her admission into the Hospital Saint Louis. At the death of this child, she had had milk-abscesses, then ulcers on the nipples. From that time she enjoyed good health, then, under the influence and at the period of menstruation, she observed an eruption of copper-colored spots on the arms, soon surmounted by vesicles which, drying *in situ*, produced small branny scales. Cazenave recognized therein a vesicular syphilitic eruption, which afterward spread to the neck and forehead. In this latter situation, she presented also some non-ulcerating syphilitic tubercles.

But, I repeat, it would be necessary to ransack very diligently the annals of science to discover a fact equivalent to this one. We are, therefore, fully justified in asserting that:

A child born syphilitic through the agency of its parents, never communicates the disease to the mother who suckles it. The extreme importance of this law in reference to treatment will, I hope, appear a sufficient justification of the development which I have felt called upon to give to the preliminary remarks. For the syphilitic new-born child frequently cannot find any other breast than that of its mother; and in spite of the generous impulse which would doubtless induce many of these to confront the risk of contagion, it is, nevertheless, something to their families to know that they may expose themselves to it with impunity.

The most interesting point in connection with the transmission of syphilitic symptoms from the suckling to its nurse, is the very fact itself of this transmission. After having discussed it, nothing remains to be pointed out but a very small number of circumstances connected with it. It would be useless to enlarge upon the conditions which favor it. They have already been pointed out relatively to the infection of the child by its nurse, and are absolutely the same here. The following examples show how little prolonged the relations between the two individuals need be to enable the disease to propagate itself from the one to the other.

A nurse, says Campbell,[1] took on the afternoon of Sunday a syphilitic child, which had already been treated and was believed to be cured by the iodide of potassium. She perceived that it was still ill, and, to avoid contagion, returned it to its mother on the Thursday. Despite this precaution she nevertheless became affected with well-marked constitutional lesions, first on the breasts and afterward on the whole body.

A woman named G——, who had been sent for to Lyons to suckle a child, observed it to be covered with pimples, and refused to give it the breast longer than *three days*. Although she had always enjoyed good health and had had six children, which were also quite healthy, she observed, three weeks after this short nursing, three large pimples round the nipple with swelling of the glands in the axilla. At a later period she had cephalalgia, alopecia, papulo-squamous eruption, and ulceration of the tonsils; lastly, mucous patches on the genital organs.

When she was admitted into the hospital de l'Antiquaille, Doyon and Dron were able to verify the existence of most of these symptoms. But she also brought her own little boy there, a child of fifteen months old, and who, having been healthy previously, contracted an affection of the mouth after having sucked the diseased breast of his mother. Under the observation of the medical attendant, this child had, during its stay in the hospital, an eruption of mucous patches at the commissures of the mouth, and afterward spots of roseola over the whole body. Both mother and child were cured by mercurial treatment (*op. cit.*).

It would be incompatible with the plan of a monograph devoted to the syphilis of new-born children to follow the succession of the symptoms and the progress of the disease in nurses. I shall dwell upon one point only of its description, *the glandular swellings* which they present. Nothing is more common than to see in nurses infected through the breast, enlargements of the lymphatic glands in the corresponding axilla. Mahon[2] had already observed this, and regarded it as being almost a general rule; and most of the observations which I have verified have furnished examples of it.[3] Could this import that the lesion upon which such enlarge-

[1] London and Edinburgh Monthly Journal, 1844, p. 515. [2] Op. cit., p. 440.

[3] The indolence of these swellings sometimes prevents women who are the subjects of them from paying sufficient attention to them. I saw, quite recently (January 16, 1854), a nurse infected through the breast, who answered my question on this point by saying that she had no tumor under the arm. On pressing in the axilla I discovered a glandular swelling of the size of a large nut.

ment depends was a primary chancre? Not in the least. If such were the case, if these glandular swellings presented the same pathogenetic conditions as buboes produced by primary chancre, they ought to assume the same semeiological behavior; they ought, especially, to suppurate occasionally. But the absence of suppuration is, on the contrary, one of their constant, pathognomonic characters, as Egan[1] has formally expressed it, and as may be seen in the cases related above. The frequency of these enlargements is explicable, I think, in another way. It is only one of the applications of this great result of observation, viz.: that *the poison of syphilis when it invades the organism of an individual, always determines a process of reaction in the first gland which it meets with in its course, manifested externally by the enlargement of that gland.*

Thus:

If chancre, in the adult, does not infect the constitution without having produced a bubo more or less indolent;

If, as was stated above, cervical buboes are almost the only ones observed in infants infected during lactation; and if they are only observed in those in whom syphilis has commenced by lesions of the mouth;

If the fœtus, contaminated by the blood of its mother, frequently presents, in induration of the liver, the etiological equivalent of the glandular induration which accompanies infecting chancre in the adult;

If, in a child which has contracted disease through the nurse's milk, we see tabes (a rather common complication, according to Bertin, of congenital syphilis) representing the engorgement of the first glands situated in the course of the fluid which serves as a vehicle for the poison;

If, lastly, in observations of the development of syphilis in the adult by the inoculation of constitutional lesions, Wallace (with proper reservation as to the value of these experiments) has observed engorgements occurring in the glands which correspond to the point of puncture;

Assuredly, I am fully justified in offering the preceding remark as the expression of the mechanism to which nature constantly subjects herself in such cases, and the axillary engorgement in nurses infected through the breasts as one of the exemplifications of this general formula most easy of comprehension.

Of the symptoms in a new-born child, that which most frequently serves as the agent of transmission of the disease to its nurse is the mucous tubercles, especially the ulcerating mucous tubercle. This depends: first, upon its being the most frequent of all the constitutional lesions peculiar to this age; secondly, upon its furnishing the most abundant liquid secretion; lastly, upon its always being the first, or one of the first in date in the order of appearance followed by the various syphilitic manifestations in new-born children.

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[1] Dublin Journal, p. 345.

As regards the lesion by which the affection commences in the nurse, this point has not yet been so clearly determined. It might be made the subject of a very interesting inquiry. But to undertake it would be to depart from the plan traced out for me by the programme of this work. I shall merely repeat that I have seen (p. 151) a papular spot *not in the least degree ulcerated*, present the initial lesion in a nurse, the starting point of the constitutional syphilis which she had contracted from her suckling.

VI.—*Transmission of Syphilis from the new-born Child to indifferent Persons.*

The nurse, having the most frequent and intimate relations with the child, is naturally especially exposed to take the contagion from it. But other persons may equally contract it by simple accidental contact with the parts affected. This proves that, like chancrous pus or blennorrhagic secretion, the communication of this poison is favored by warmth, sanguineous congestion, and nervous erethism of the organs upon which it is deposited, but that no one of these conditions is absolutely indispensable for its propagation from one individual to another.

It is, above all, to the young persons who attend to the child, who carry it in their arms and caress it (instinctive anticipation of the cares of maternity), that the symptoms are most frequently transmitted. The two observations by Facen and Petrini, like that of Ambrose Paré, and that of Cazenave, have already furnished us with examples of this. But the most advanced age does not exempt from these risks. The case mentioned by Egan, in which he saw an ulcer resembling a chancre develop itself on the neck of a woman of sixty at the spot where, having previously pricked herself with a pin, she had kept the mouth of a syphilitic child applied, has been quoted much too often to be reproduced here. But, from the paucity of the details supplied by the text, it is impossible to decide whether anything else was transmitted than a primary chancre.

The following facts appear to me much more conclusive:

A woman who had contracted syphilis during her pregnancy, bore a child which she committed to the care of a woman of sixty. The latter frequently put the spoon from the child's lips to her own.

The child was healthy at birth. But Starck having seen it again at the end of five months observed symptoms of constitutional syphilis in it. As regards the old woman, he found in her an eroding ulcer at the isthmus of the throat, the septum of the nose destroyed, and nodes on the tibia and on one fore-arm. She and the child were both cured by the use of specific remedies.[1]

Waller relates that an old woman of seventy contracted syphilis from an infected suckling. He states that the symptoms first developed themselves on the left cheek and left side of the neck, where she was in the

[1] J. Starck, Edinb. Med. and Surg. Journal, 1851, p. 366.

habit of holding the child when she wished to quiet it or to put it to sleep.

The transmission of syphilis to persons of such an advanced age supports very strongly the theory which I advocate; for we may here safely deduct coitus and its sequelæ from the number of the causes which might have misled the observer. I will relate an analogous case quoted by Bardinet. It refers to a child born of parents who were both syphilitic, and which, two months after birth, had ulcers on the genitals and in the mouth. It first infected a strange nurse. Then the child's own grandmother, who attended to, fed, and often kissed it, contracted specific ulcers in the throat, which, not having been treated, had existed four years at the time when she was examined. "It is true," adds the conscientious doctor of Limoges (but I have not been able to make out whether it is an innocent piece of raillery which he addresses to his opponents), "it is true I did not examine the genital organs of this grandmother!"

Doyon and Dron saw, at l'Antiquaille, an old woman of seventy, who had contracted mucous tubercles on the lips, from having tended and fed a child which her daughter, aged thirty-three, was suckling. This daughter had herself been infected by the child, which died when three months and a half old, its body being covered with an eruption of copper-colored papulæ. As for the mother, when she entered the hospital (September 27, 1853), she presented, in addition to the state of emaciation and debility which dated from the commencement of the syphilitic poisoning, ulcerating mucous tubercles on the lips, especially the lower lips, and others upon the tonsils, anus, and vulva.

Lastly, to conclude what refers to these senile infections, numerous enough as is seen, I will call to mind the case observed by Loret,[1] in which a spoon carried from the mouth of a diseased suckling communicated the syphilitic affection to the nurse, to the mother of this nurse, then to her daughter, thus poisoning, in the same family, three generations.

I introduce here the history of a case, very simple in itself, but which I have felt bound to quote, because I can bear witness personally to the authenticity of it:

Marie M——, aged thirty-seven, was admitted into l'Hôtel Dieu de Lyon, December 2, 1852. Ten months before, this woman took into her house a child which had been given to her to wean. She remembered having often eaten with the same spoon as the child. After some weeks she observed that she had ulcers in the mouth, between the cheek and the lower dental groove. They have continued there, with some variations, in their present form: long fissures of a diphtheritic character. At the end of three months, an eruption of copper-colored papulæ appeared on the back and on the anterior surface of the thorax; it was soon accompanied by

[1] Procès-verb. du Congrès de Nantes, p. 136.

cephalalgia, the returns of which were especially intense at night. To these were added two large red pustules at the margin of the anus, the surface of which, she stated, was always moist.

At the end of five months, her husband contracted ulcers in the mouth, which still exist, without any trace of a lesion on the penis.

The patient was examined carefully; she presented no cicatrices or swellings in the groins. The genital organs were healthy. She has had, since her illness, enlarged glands under the lower jaw; but they have not suppurated, and have scarcely given her any pain. These glands are at present of the size of a small pea.

This woman was treated internally with proto-iodide of mercury. Calomel was strewed upon the mucous patches about the anus, and the ulcers in the mouth were touched with nitrate of silver.

She began to improve about December 10th; the ulcers in the mouth and the mucous patches were already sensibly modified.

On December 20th she was cured of these symptoms, and wished to go out, promising to continue the treatment for a month.

She stated positively that the mother of this child had had the same disease. A former nurse had already taken the infection from it.

As for the child, it is at present twenty-eight months old; but it is lank, emaciated, and has the appearance of a child of only six months old. Since she sent it back to its parents, she has learnt that they have put it under treatment, but it is still so weak that it cannot walk.

In these various cases, the contagion has not always been conveyed directly from the child to an indifferent person. An infected person often becomes the intermediate link between the first source and individuals more or less closely connected with him. In such cases, it is not observed that the disease contracted by contact with a person who has received it from a new-born child differs, in respect to its severity, from that received immediately from the new-born child itself.

Colles maintains that in these multiple transmissions, "the symptoms in the different individuals resemble each other exactly, which does not hold good for the ordinary syphilis of adults." This shrewd observer has, I believe, here been the dupe of an illusion, since facts by no means establish the constancy of such a similarity. If it appears to exist in the greater number of these cases, it is because the symptom most frequently transmitted is the mucous tubercle, and because, being the same, it ought, in fact, to be reproduced in the person infected with characters identical to those which it presented in the infecting person.

PART IV.—MEDICO-LEGAL BEARINGS.

ELEMENTS OF THE JUDGMENT OF AN EXPERT.

If a child born under normal conditions of health strengthen the ties which bind its parents either to each other or to society, one whose origin has been contaminated by syphilis often becomes, on the contrary, the source of dissensions and serious evils in families. So long as the impression produced by such an event is confined to suspicions or recriminations, the office of the medical man is purely confidential; and I have already, in more than one passage, endeavored to define exactly the course which he ought then to pursue in order to promote the true interests of his patient without violating any of his duties. But when the tribunals require his opinion, he has only to state the truth. It is, then, the nature of his duty as a witness or an expert that we have now to determine.

I shall not speak of the outrages which libertines are sometimes led to perpetrate upon poor defenceless children. The mechanical lesions and the inoculations of syphilis which may result from them are not more difficult to verify in the new-born child than at a more advanced age. It suffices that the attention of the medical man is called to the possibility of an act so monstrous, to induce him to take it into account when he has to determine the origin of any venereal affection in the infant at the breast.

I must also pass over the question relative to the actions for divorce, for which the birth of a syphilitic child sometimes furnishes grounds. This proof of bad conduct in the husband or the wife has never much weight in the eyes of magistrates, first because it furnishes evidences of an isolated fact only, and not of debauchery which has become habitual; further and especially, because it is usually very difficult, and very frequently impossible to discover, by the inspection of the new-born child, from which of the two parents the hereditary disease of which it bears the marks proceeds.

The most usual subject for a judicial inquiry is when a child, intrusted to a strange nurse, presents, after a certain time, signs of syphilis. Then,

if the parents believe themselves to be healthy, or represent themselves as being so, they accuse the nurse of having communicated the disease to the child, and consequently claim damages from her. But the nurse, finding herself infected, believes, or pretends to believe, that it proceeds from her foster-child, and demands, first or in retaliation, an indemnity from the parents. But these two opposite and irreconcilable interests, bearing upon the same fact (of which they strive to the utmost, each in an opposite sense, to pervert the slightest details), give rise to difficulties which are still more increased by the uncertainties and dissensions of science on this special point. The laws on this point are also far from being developed, and without aspiring to fix them I may hope to render some service by applying to the solution of so grave a problem the data acquired in the foregoing researches.

To assume dissimulation and bad faith everywhere is a painful office; it is, however, the one which the expert must resolutely undertake here, if he would ascertain on which of the two sides innocence lies; for it is not enough, in such a matter, to divide the blame equally between the two parties. This tendency would be out of place. In fact there is always a victim as well as a culprit here. And to proclaim the truth, when he can, is a mission which the man of science cannot conscientiously decline, even if his professional duties did not render it a strict obligation. Let us examine then, in succession, the various elements which he will have to take into account in this inquiry, and above all, let us endeavor to determine their exact value.

I.—*Morality.*

Although we must never affect an uncourteous scepticism on this point, certificates of morality and analogous statements ought not to have more than a very slight influence on our minds. Syphilis is neither always the result of a fault, nor always the consequence of disease in the parents or the nurse. A neighbor or a servant may have infected the child. What would then be proved by the best established virtue of those who have had direct relations, whether of kindred or nursing with it? In this class of considerations, on the contrary, I shall concede some importance, as a presumption of culpability, only to the flagrant and averred *immorality* of one party or the other.

II.—*State of Health, Previous and Present.*

This question is divisible into two heads.

A. *On the Part of the Parents.*—The venereal symptoms which have existed in the father or the mother are usually already effaced at the time of delivery. They are so, *a fortiori*, when, at the end of one or two months,

symptoms begin to be developed in their child. They are so still more when the nurse, having contracted them in her turn, lodges a complaint, and causes the inculpated parents to be submitted to an examination. If we reflect, moreover, that the latter, knowing themselves to be in fault, have had ample time to obliterate the accusing lesions, we shall understand that the most minute inspection, made at this period, could not, when no discovery has resulted from it, legitimately be invoked by them to prove that their health was good at the time of the conception of the child.

We find these motives for distrust fully appreciated in a verdict of the tribunal of Tulle, of December 22, 1841, reported by Bardinet.

Mrs. Mon——, being affected with syphilis, and conscious of the fact, gave her child to two nurses in succession. They both presented, first ulcers on the breasts, then well-marked symptoms of general syphilis. Mrs. Mon——, against whom an action for damages was brought by the second nurse, Marie N——, affirmed that she had never had venereal disease, but only a tettery eruption; and to prove the sincerity of her words, she urgently demanded to be examined. But her delivery, from which all the evil originated, had occurred twenty months previously, and she had been attended by two medical men at that time. The court therefore rejected this plea on the following grounds:

"In consideration that, on the demand of an examination of the woman Mon—— by medical men, the long period of time which has elapsed since the origin of the facts, and the treatment employed, do not admit the hope of any useful or certain result from this measure."

The sentence, founded chiefly upon the knowledge which the parents Mon——, warned by the misfortune of the first nurse, had of the dangerous state of their child, condemned them to pay a thousand francs damages to Marie N—— and costs. It was confirmed, on appeal, by a decree of the court of Limoges.

The medical man must especially be on his guard against the apparent good faith of the parents, who declare and maintain with as much emphasis as apparent candor, that they are incapable of having contaminated their child. This candor is not always feigned; the husband may misinterpret the significance of certain freaks of his youth, of which he has lost all recollection; the wife has sometimes had, unperceived, a small vaginal or uterine chancre, which has been concealed by *leucorrhœal discharge*.

But the parent who can, in all truth, answer for himself or herself, is not in reality so justified as he or she imagines in offering a guarantee of the health of the other. Sometimes also, and Ricord [1] has related an instructive instance of this, the real father is not always the one supposed; and, to discover him, this sanitary inquiry would sometimes have to be carried out through a whole regiment of cavalry.

All this must not prevent the medical man from proceeding to the examination of the parents; for if the negative result of such examination

[1] Treizième Lettre sur la Syphilis.

does not positively exonerate them, it may still throw some useful light upon the question. By pressing them with questions, by enlightening their ignorance by means of an exact description of the symptoms with which they are supposed to have been affected formerly, avowals are sometimes elicited which facilitate an amicable arrangement. The minute examination, not only of the genital organs, but of all the regions which serve as sites for the vestiges of syphilis, the neck, the throat, the groins, the palms of the hands, etc., frequently possesses the same advantage.

B. *On the Part of the Nurse.*—The nurse is placed in circumstances much more favorable for the discovery of her disease. In the first place, she cannot, either at the time when she takes charge of the child or afterward, refuse to allow herself to be examined as often as is required. Secondly, as soon as the suckling becomes diseased this is perceived; and, as the nurse can also be examined, there is much more chance of discovering the disease in her if she communicated it. Lastly, the seat of the lesions in the child indicates the spot where they may be expected to exist in the nurse.

The causes which may render this examination fruitless must not, however, be lost sight of. The nurse is sometimes cured, and that without any appreciable traces, at the moment of examination. In other cases (of which Bertin and Cusack have given examples, see p. 42), the nurse has been only the mediate agent of contagion, the principle of which has been deposited upon her nipple by another infected foster-child, to be taken thence by the child in question. Further, if the milk of the nurse be capable of infecting the child she is suckling, she may, in this manner, infect it at a time when, although herself the subject of syphilitic *dyscrasis*, she does not present any symptoms which can reveal to the medical man the existence of the disease at a former period. Lastly, the contagion may proceed from some indifferent person who has had relations with the newborn child; and although the transmission may have taken place in the house of the nurse, and although she ought then to be, to a certain extent, responsible, it is clearly not by her act, and she might be examined in vain for material proofs of culpability. The husband ought always to be examined.

III.—*State of Health of the Persons exposed to contracting Syphilis from the same Source as the Infant at the Breast.*

A child is accused by its nurse of having communicated syphilis to her. The parents to exonerate themselves, allege that its mother had previously suckled it with impunity; that consequently, as it had not infected her, it could not have infected the nurse. But such an argument could not have much weight in presence of the numerous examples quoted above,

which establish, according to Colles (see p. 167), the special immunity of the mother from contagion proceeding from her own child.

The legal advisers of the parent, or those of the nurse, sometimes imagine that they can discover something in the state of health of the brothers or sisters of the suckling wherewith to confirm their assumptions as to that of the latter. If the former have syphilis, they say the latter had it also, and has been capable of transmitting it. If they have it not, the suckling is exonerated from all responsibility, and the accusation falls back upon the nurse! We have already found, in the preceding chapters, matter for refuting such arbitrary conclusions. Between two syphilitic children, another may be born healthy of the same parents, and *vice versâ*. Treatment has corrected the diathesis; or it has disappeared by virtue of its tendency to spontaneous decrease. These are so many facts, the demonstration of which I hope is at present complete for the reader.

A child born with syphilis sometimes communicates it to other persons than her who gives it the breast; or it infects one nurse and spares another. The observation by Petrini, already quoted, is an instance of this. It warns the medical expert never to conclude from the circumstance that one or more nurses have remained intact, that another may not have contracted the disease through her relations with the same child. Nothing is constant or compulsory in reference to contagion: I have stated this already, but this is quite a fitting place to repeat it in.

IV.—*Nature of the Symptoms.*

In the eyes of certain writers on syphilis, this order of considerations would suffice most frequently, in itself alone, to decide the opinion of the expert. Nothing but mucous papulæ is found upon the child; it therefore has not transmitted the disease! The nurse also might often claim the benefit of this non-contagiousness of secondary symptoms; and, what is strange, constitutional syphilis well and duly characterized would thus confer upon its victim inviolability against any prosecution of this kind!

But at this rate, in spite of the ever-increasing number of victims, there would be scarcely any culprits more; for it is the mucous papula, whether ulcerated or not, which is met with almost constantly in the nurse or the child, as the first lesion resulting from transmission. And primary chancres, the only contagious symptom according to this theory, exist in very small minority of cases only in either of them. Forced to resort to explanations to render all the facts in its systematically restricted expression intelligible, the theory has recourse to the assumption of chancres unobserved, forgotten, or concealed, to transformations *in situ* of chancres into mucous tubercles, to chancres given to the nurse by another than the child. This is not the place to repeat what has been answered above on the sub-

ject of these various interpretations. I, who believe in the contagious property of congenital mucous tubercles, will merely say:

1. That when we observe a lesion of this kind in the nurse, or in the child, we cannot safely conclude that they have been unable either to communicate or to contract it.

2. That the mucous tubercle partaking, under these circumstances, of the contagious power of primary chancre, its demonstrated presence in either of the two suspected individuals becomes, on the contrary, a presumption that the syphilitic communication has been effected in that way.

I have to add that, congenital symptoms being much more evidently contagious than those which result from chancres, if the nurse has propagated the disease with which she is affected to several persons, there are some reasons for inferring that she had herself contracted it, not by coitus, but through her relations with an infected suckling.

V.—*Seat of the Symptoms.*

When a nurse is infected through lactation, it is almost always in the breasts, and especially on the nipple or areola, that the disease first appears. Bardinet, who has established the truth of this semeiological view by numerous cases, has employed it most usefully in the following case:

An unmarried mother, Anne R——, presented herself with her child of four months old, which she was suckling, stating that she was affected by it.

The breasts presented no lesion of the nipple, areola, or surrounding parts. They were merely covered with mucous tubercles in the fold which they form at their lower part, where they join the chest. Ulcers and mucous tubercles existed also in great number at the entrance to the vulva. As for the child, it had an ulcer on the upper lip and chin, and dry eruptions upon some other parts of the body.

Bardinet, judging especially from the peculiar seat of the mammary pustules, did not hesitate to tell the girl R—— that she was trying to deceive him. She ended by confessing her falsehood, and admitting that she had been ill before her child.

Although in this particular case, no judicial proceedings were to be feared, it shows what assistance an expert might, when a dispute of this kind arises, gain from the strict principle so judiciously propounded by the learned professor of Limoges.

VI.—*Comparative Date of the Symptoms in the Nurse and in the Infant at the Breast.*

This datum, when it can be strictly determined, decides the question of two suspected parties; if one is convicted of having been attacked first, that one is evidently the culprit. The circumstances which might rob this element of certainty of its diagnostic value are so rare that they may, in a

general point of view, be left out of the account. It would be very exceptional indeed that the same subject—the nurse, for instance—should first contract a chancre in the usual way and afterward receive syphilis from her suckling. And yet the possibility of such a coincidence must not be overlooked.

But it is not usually thence that spring the difficulties of ascertaining which of the two subjects has first been attacked. Most frequently the complaint is not made, or at least does not lead to a medico-legal examination, until several months after the commencement of the symptoms in the second person infected. And then the difference of appearance dependent upon the difference of date has had time to disappear; for if it be easy to distinguish lesions of eight days' standing from those of a month's, it is almost impossible to make the same distinction when some of them have appeared two and others three months before. A man of large experience, will, however, sometimes be able to draw the most lucid inferences from the determination of the period which the disease has reached in the child and in the nurse who suckles it. Here are two instances, one tending in one direction, the other in the opposite, taken from the notes of a man whose profound knowledge and catious judgment no one will dispute.

A woman who had ulcers and tubercles on the breasts, and the whole of whose body was covered with lenticular and squamous tubercles, went to consult Cullerier.[1] Her suckling, at seven months, had nothing but coryza and some pustules on the genitals. Cullerier pronounced, from the nature and standing of the symptoms in the nurse, that she had been infected before the child contracted the disease. The judgment was so much the more commendable because appearances seemed to invalidate its correctness; for the father and mother, having had chancres at the commencement of the pregnancy, believed themselves culpable. Cullerier asked to see the husband of the nurse, discovered a large cicatrix in his groin, and obtained from him an admission that he had previously had a suppurating tumor there.

Notwithstanding my respect for the authority of Cullerier, I cannot see in his sentence the characters of an unassailable evidence. Was the difference between the lesions in the child and those in the nurse sufficiently great to justify him in inculpating the latter on the evidence of a mere cicatrix in her husband, and to exonerate the parents in spite of their explicit avowals? The second case is proof against these objections.

Cullerier[2] was asked to examine a child of seven weeks old, affected with incipient pustules on the *labia majora* and about the anus. The nurse, examined the same day, presented nothing morbid, either about the genital organs or nipples. Eight days later, she returned with the parents of the child, having then some ulcers on her breasts. They accused her (not, by their own account, having any disease themselves) of having infected their

[1] Jour. Gén. de Méd., lv., p. 32, 1816. [2] Ibid.

child. Cullerier, remembering that, a week before, he had found her nipples perfectly intact, although, at that time, the suckling was already affected, declared that the contagion did not proceed from the nurse. Tardy confessions on the part of the father afterward explained the case in accordance with this version of it.

In spite of the strong probabilities which result from these estimates, it must not be forgotten that the more active vitality of the child may precipitate the progress of the symptoms in it, and shorten the period of their incubation. With the appearance of an equal standing, therefore, the syphilitic lesions in it ought to be looked upon as more ancient than those in the nurse.

Another eventuality might supervene to shake the conclusions drawn therefrom, viz., the possibility of a mediate contagion. In the second case, just quoted, if the nurse had had venereal poison deposited upon her nipple by another child, might not the one in question have contracted it by the mouth, and then present specific symptoms before the disease became manifested in the nurse, without her having been the agent of the infection. Fortunately, such coincidences are very rare.

VII.—*Absence of Primary Symptoms.*

Constitutional syphilis in the adult always commences, it is said, by a primary chancre. This chancre, it is further asserted, leaves visible traces for a long time. Therefore, if a nurse and the child suckled by her both present constitutional symptoms, while no vestige of primary symptoms is observed upon her body, it may be concluded therefrom that it is her foster-child who has infected her, and not she it! I am astonished to see, in the following observation, a similar consideration dictating the sentence of a court.

A little girl, covered with an eruption regarded as syphilitic by the medical authorities of the hospital at Meaux, was at nurse, at La Ferté, with Mrs. F——.

This woman, having had consecutively pain in the breasts, then ulcers, and afterward angina, with ulceration of the back of the throat, was examined together with her husband, and did not present any old or recent traces of primary syphilis. The medical authorities of Meaux concluded, from this, that the syphilis had been transmitted to her by her foster-child; and the tribunals, called upon to pronounce upon the injury done to this nurse, awarded her damages to the amount of two thousand francs.[1]

Without doubt the judgment of the magistrates was founded upon other points in the evidence; but the medical experts, called upon to pronounce exclusively upon the scientific question, ought not to have forgotten, first, that a chancre is so far from being the sole origin of syphilis

[1] Gaz. des Hôp., 1851.

that, according to their own declaration, this woman had contracted it from her foster-child—that, consequently, she might have received it from a second child, or from another person *congenito-constitutionally* infected; secondly, that, even assuming a chancre to be the necessary starting-point of syphilis, a small cicatrix, especially if old, lost in the folds of the vulva or the back of the throat, might very well have escaped the most minute examination.

Nevertheless, the absence, verified as far as possible, of previous chancre in the nurse, affords a pretty strong presumption in favor of her innocence. It would be as unjust to refuse this evidence any place, as to raise it to the first.

VIII.—*Presence of Primary Symptoms.*

In a very large majority of cases, the most scrupulous examination does not lead to the discovery of any chancre, either in the child and its parents, or in the nurse and her family. Sometimes, however, one of them presents either a primary ulcer, or the characteristic persistent local or glandular induration. Must we, then, declare culpable the individual who thus appears to carry with him his own condemnation? Beyond dispute, a chancre proves that there is transmissible disease; but before being transmissible, it has been transmitted; search then: it is often by going back to the most remote sources that you will discover the true origin. The conduct of Cullerier in the following case is instructive.

The president of the Court of Vacations, says he, sent to me a nurse who complained of having contracted the venereal disease from a foster-child. In fact, she presented constitutional symptoms of it, and stated that she had previously had ulcers in the mouth and on the breasts. The child, which was a year old, had a round superficial ulcer on the inner surface of the upper lip, and a similar one on the perineum. These ulcers had the characters of primary venereal disease.

I drew up my certificate in the following terms: "In consideration that I have not been able to verify the state of the disease at its commencement, either in the nurse and her husband, or in the child and its parents, it is impossible for me to determine absolutely whether the child has given or received the disease."

The tears of the nurse had, at first, disposed me to place confidence in her; but as she said that her daughter, aged fourteen, had also been infected by this child, I had her brought to me. She had ulceration of both tonsils, and a large tubercular pustule on the left *labium majus*. On examining her more closely I found some ulcers on the interior of the *labia minora*, the hymen torn, and the vagina rather large. She admitted, moreover, that she had had sexual intercourse. It is probable, therefore, that it was she who, being affected with chancre, had communicated it to the child, on the mouth and perineum, while washing it.[1]

[1] Journ. Gén. de Méd., loc. cit.

While correcting the proof sheets of this work, the following case has revealed to me, in reference to this question, a singular association of circumstances very capable of embarrassing the practitioner and of causing the magistrates to hesitate.

Mrs. N—— consulted me, in the course of the month of January, 1854, for a series of symptoms, the concatenation of which she thus described to me. Married fifteen months, she had about the middle of her pregnancy some pimples on her genital organs (her husband confessing a previous venereal affection, but of which he believed himself cured at the time of his marriage). Dr. D—— submitted this lady to a treatment consisting chiefly in pills, and told her she had nothing more to fear either for herself or for her future child. She has, in fact, since continued fresh and healthy.

Delivery occurred at the full time. The child, which was healthy, was given to a first nurse. But as it did not seem to thrive with her, it was taken away at the end of three months, and intrusted to a woman named P——, living at H——. At that time the child, though weak, had not, according to the account of its mother and the new nurse, any apparent trace of disease. What then occurred? I have not been able to obtain very exact information on this subject, either from one side or the other. But two months after the change of nurse, the woman P—— found herself in a state which rendered medical advice necessary; and it was then that she was brought to me, with her foster-child, by the mother, Mrs. N——.

I verified in the nurse a recent cicatrix, not indurated, immediately beneath the right nipple, about the size of a franc-piece; an indolent tumor in the axilla; mucous tubercles of the throat and vulva; hoarseness of the voice; impetigo of the hairy scalp and alopecia; extreme debility; pallor and emaciation; absence of swellings in the groins; no visible traces of primary chancre on the genital organs.

The child, then five months old, and covered with yellow spots upon the chest and trunk of the body, as well as on the arms, had large separations of the epidermis on the legs, feet, and hands. The tumid abdomen, the extreme emaciation, the frequent refusal to take the breast, and the almost incessant cries, made me fear some visceral affection, and predict an early death. The child still had some ulcerated mucous tubercles at the commissures of the mouth.

I subjected the nurse to the administration of iodide of mercury, and iron; she recovered pretty rapidly. As for the child, suspecting induration of the liver in it, I prescribed nothing in the shape of specifics except mercurial frictions in the right hypochondrium, to be renewed very frequently; further, the ingestion of a little beef-tea and goat's milk, which its residence in the country made it easy to obtain. At present, March 24, it appears to experience the good effect of these measures; at least it is still alive, although the most unfavorable prognosis, and at a very early date, had been formed by all who had seen it.

But let us return to the medico-legal point of view. The woman P—— pretended that, not only had the child N—— given her the disease, but that she herself had afterward transmitted it to her husband. I did not express any doubt as to the possibility of the fact, but merely asked to verify it for myself. The husband therefore came to me on February 23. But what did I find in him? Two chancres in the groove behind the *glans*

penis, almost cicatrized, but *manifestly indurated*, with the characteristic double inguinal accompaniment, and already mucous tubercles on the tonsils. When questioned by me, he sought to repeat the accusation brought against the infected foster-child; but it did not require a long conversation to make him cast down his eyes, and to prove to him that this assertion, which was but an error on the part of his wife, assumed, when coming from his lips, the dimensions of a lie.

The *seat* and *aspect* of the chancres in the husband P—— are evidently opposed to their being accepted as the effect of the transmission of a congenital lesion. To me it appears indubitable that he had contracted them through an improper extra-conjugal coitus. But, evidently also, his wife had received, during lactation, contagion by the agency of her foster-child, which was infected hereditarily.

The husband and wife P—— claim an indemnification from Mrs. N——. The latter, informed of my views with regard to the husband of the nurse, now shows herself little disposed to yield. Let us suppose that the tribunals are asked to settle this question. Let us suppose that, irritated by this state of things, Mrs. N—— is induced (as so often happens) to deny everything which cannot be proved against her, to retract what she had at first admitted concerning the disease in her husband and the pimples on the vulva which she had during her pregnancy. Let us suppose, further, that a clever lawyer, initiated into the views of Ricord's school, has undertaken to prove that the husband P—— has been, at one and the same time, the *primary* and the *first* culpable party! I should then, I confess, greatly fear that the substance would be sacrificed to appearances, and that the judges, believing themselves to be deciding quite equitably, would not convict Mrs. N—— in the damages to which the woman P—— has, in my opinion, and despite her husband's fault, a real claim.

In every case, a primary chancre (I mean one distinctly recognized as such, even by the aid of inoculation, if necessary) existing in a child, and which has not commenced in it before the fifteenth day after its birth, is a valuable indication for arriving at the source of the disease. Firstly, it exonerates the parents, by repudiating both congenital infection, which never expresses itself by such lesions, and hereditary infection, the effects of which would have appeared earlier. We must not, however, too hastily inculpate the nurse for this reason only, for other persons may have propagated the germ of contagion; but it is already much gained for the expert no longer to have to institute investigations on the side of the parents.

IX.—*Absence of Interested Motives.*

A very weighty argument in the eyes of people of the world is thus expressed by them; the party complaining is always in the right. In fact, they say, would he make public a disgraceful disease, if he did not

feel certain of a wrong unjustly suffered, and for which he is justified in claiming indemnification? This reflection has a certain force; but it might more legitimately be applied to the families of the children than to the nurses. And in truth the parents of the child generally attach more value to secrecy, and less importance to a pecuniary reparation. The nurse is placed in altogether opposite circumstances. She is little afraid of divulging her disease, which she calls a misfortune; and she has, in general, much to expect from people more favorably situated in respect to fortune than herself. I do not mean by this, that every nurse traffics with it. But it is true, however, that it is on her side that the medical expert will chiefly have to guard against false accusations. In general terms, as many nurses will be induced to *simulate* syphilis from cupidity as parents to *conceal* it from fear of scandal.

It nevertheless sometimes happens that an infected nurse has not lodged a complaint, and that we are asked to examine her in consequence of the action brought against her. In this special case, she is entirely freed from the suspicion I have just alluded to; and she has a right to be believed in all those of her assertions which bear upon anterior facts, upon facts with which she alone can be acquainted.

Conclusion.

Let us sum up the corollaries which spring from this enumeration. Of all the means of supervision which I have mentioned, not one brings with it an absolute certainty; for, strictly speaking, even those most decisive in favor of one of the parties are susceptible of an interpretation which converts them into a weapon for the adverse party. Here, then, as in many medical diagnoses, it is by grouping them together that we shall succeed in using them in such a manner as to extract an admissible conclusion from them. We must not look to their number only, but must only compare their respective weight, and, above all, the probability of the versions by which a character might be given them contrary to that which common sense had at first assigned to them.

There are also certain circumstances of morality and veracity which the medical man alone is in a position to appreciate. In some cases in which the domestic circumstances of his patients are thoroughly known to him, they exercise an immense ascendant upon his judgment. He must not attempt to resist it, provided always that the influence of friendship, *the desire* (so instinctive a feeling!) *of extricating his client cleverly from an awkward position*, be not superadded almost unknown to him.

Culpable manœuvres are sometimes practised by ill-advised nurses. Cullerier told me that he had among his patients a rich and respected gentleman whom a nurse had been plundering mercilessly for nearly a year by threatening him with an action of this kind, an action to which, al-

though innocent, he would not expose his high position, which rendered proofs of paternity as compromising for him as proofs of syphilis. The following fact has appeared to me to be of the same kind :

I saw with Dr. Brachet, in 1851, a poor infant at the breast, which was presented to us as an evidence of the misconduct of its father by the counsel of the wife, who was suing for a divorce. We were asked to declare it syphilitic, on account of a pretty deep ulcer which existed on its cheek. Robust, fresh, and with an excellent color, there was nothing but this one sign, in which we recognized without difficulty the effect of a cauterization performed expressly to simulate a venereal ulcer.

The medical man must not become the defender of either one party or the other. His interest, if not his conscience, warns him sufficiently that he could not with safety accept such a position, which the parents, *under the pretext of having made admissions to him*, sometimes persist in endeavoring to force upon him. All he is then at liberty to do is, to keep himself apart and leave to another the duty of drawing up the required certificate.

But if the obligation to be truthful be not a duty of which it is very necessary to remind medical men worthy of that name, there is another which the law imposes on them, and which they are only too much inclined to elude ; I mean the obligation of expressing to the magistrates their opinion, such as they have formed it for themselves from the investigation of all the *pathological* circumstances of the facts of the case. Many experts are content to enumerate the elements upon which the conviction of the tribunal may be founded, and leave to it the duty of drawing the necessary conclusions. "Their mission, they say, is to enlighten the judges, not to put themselves in their place." They thus escape the embarrassment into which they are brought in these cases by the difficulty of the scientific problem and the influence of their relations with their patients.

This is not the view which I take of the duties of the medical man. Justice does not call him in merely as a witness. By associating him with herself as an adviser, she transfers to him a portion of her attributes. She gives into our hands some part of that sacred mandate which commands respect for her decrees, and insures for her researches the aid of all well-disposed persons. We are bound, then, to communicate without reserve all that may facilitate her legitimate endeavors to ascertain the truth.

But if we are consulted, it is not for the purpose of diagnosing syphilitic lesions ; nor to decide whether they have commenced earlier in the child or in the nurse ; nor to rake up the antecedents of one party or the other ; nor to decide whether a given symptom was transmissible or not, at a given period, etc. These points are no doubt of importance, but, in the first place, some of them require only a purely material verification.

Then, of those which are of more weight to decide the point at issue in any way, there is not one, as we have just seen, to which a different interpretation (which each theory vies in declaring to be the only true one) may not very frequently impart an opposite character.

Is it for the magistrate to thread this labyrinth of hypotheses? Is it his duty—an observed fact and a simple possibility being given—to estimate the amount of probability to be assigned to each in the midst of the obscurities of scientific controversy, and the exaggerations of opposed pleading? No; this task falls upon the medical man—first, because it is intrusted to him, and, further, because he is the sole person capable of performing it well. By declining it, wholly or in part, he would betray the ends both of justice and of science; for he would refuse the first the means of repairing an injury, and the second would certainly lose in consideration by his reserve, which would be stigmatized, at the least, as incapacity, if not as reprehensible calculation.

I do not wish to deprive the expert, on that account, of the right of doubting, and of expressing his doubts plainly, when the details of the case have not enabled him to form a decided opinion *pro* or *contra*. But I wish to remind him that, whether uncertain or fixed, favorable to the parents or the nurse, appealing to the future or affirmative already, his view, whatever it may be, belongs to justice and ought to be made known to the tribunal. Van-Swieten has written:[1] "Ut famæ ægrotantium, consuletur, videntur medici, prudenti consilio, hanc causam tanquam probabilem in medio reliquisse. Sufficit enim medico luem presentem cognoscere et cognitam curare." I protest against such a programme of the duties of the medical man, if it were wished to make it his rule of conduct in a court of justice; and I conclude by declaring that, whenever his opinion is asked judicially in a similar case, he ought to give the judges who interrogate him, not only the reasons upon which any opinion of his may be based, but also his personal opinion, as explicitly as it has been formed in his own mind.

[1] Œuvres, 1772, p. 379.

PART V.—TREATMENT.

If the resources of our art had an influence upon consummated facts only, the mission of the medical man would be as restricted as his power; he would have done all that is expected of him when he had succeeded in administering specific remedies at the time, by the channel, under the form, in the dose, and for the period the most appropriate. Many special writers thus regard the office of the medical man; they confine themselves to discussing the indication for a given remedy, the superiority of the direct treatment to the indirect, and to giving some usual formulæ for suiting the treatment to the particular age—and all is said. I could name some, among the most recent even, who believe that they have exhausted the subject in *ten lines and a half* of text.

The numerous questions agitated in the first portion of this work must already have given the reader an idea of the very different manner in which I regard treatment. For there is not one of these questions which does not affect the honor and the health of families; there is not one which does not require of the medical man a categorical solution; there is not one, lastly, which may not expose him to painful solicitations, deceptions, discussions, or recrimination. But how will he be able to bear this responsibility, which weighs upon him in so many shapes, unless he has formed for himself beforehand, by a profound study of each case, a positive answer to each of the demands which his conscience, the parents, and the tribunals make upon him, with the legitimate desire of becoming enlightened as to the possible consequences of a given venereal antecedent, or of curing the troublesome results already realized? To be equal to his position, to be able to give judgments which remain beyond appeal—or at least offer no available grounds for cancelling them—to do all the good which the present state of science permits, it is not enough for him to know how to employ mercury or iodine, he must also and especially know the means which may obviate the necessity of having recourse to them.

I divide this portion of the work, therefore, into two equally important sections: *preventive treatment* and *curative treatment.*

CHAPTER I.

PREVENTIVE TREATMENT.

In the matter of congenital syphilis, the prophylaxis must be considered from two points of view, and fulfil two ends, equally useful, though distinct. It has to preserve new-born children from infection. It has to protect the persons who have habitual relations with syphilitic children. Let us study the rules which refer to this double prophylaxis.

Section I.

TO PREVENT A CHILD CONCEIVED, BORN, OR REARED, UNDER CONDITIONS WHICH EXPOSE IT TO SYPHILIS, FROM BEING ATTACKED BY IT.

I.—*Conditions Dependent upon Conception.*

Whether it be that both the engaged parties or only one of them is affected with syphilis, the medical man has only three things to do, and that according to the period at which he is consulted: To have the marriage deferred, if his advice has been asked before it took place. To treat actively the party affected, if, the marriage having been completed, there is as yet no pregnancy. To administer anti-syphilitics, and that to both parties, if conception has already taken place. Each of these points calls for some development.

First Case.—An individual actually affected with primary or constitutional syphilis, and who has not undergone any general treatment, ought to be declared unfit for marriage. This is for me a point of conscience; a prohibition, the strictness of which admits, in my opinion, neither of infraction nor concession. The danger of violating it has been largely shown by the aberrations of the Broussais school. And Moreau[1] might then most justly exclaim, at the Academy of Medicine, "Never has so much hereditary syphilis been seen as since the antiphlogistic method has been so generally employed against the venereal lesions of adults."

It is vain to hope for exemption, either for subjects who, recently cured of primary chancres, have not yet had any constitutional symptoms,

[1] Sitting of December 24, 1834.

or of those who, having been affected formerly, have for many years been exempt from any apparent symptom.

The facts which I have quoted in the chapter on etiology ought to make the practitioner extremely reserved as to the dispensations to be accorded to these two classes of patients. Upon the first he will do well to enjoin six or eight months' delay (counting from the first appearance of the chancre), if the chancre was a simple one; and in addition to this a course of mercury, if the chancre was indurated. As for the second class, if their therapeutic antecedents are in the least obscure, it will be necessary to recommence without hesitation the administration of anti-syphilitic remedies. Experience shows that, in spite of the most prolonged latency of the poison, and of the absence of constitutional symptoms for four, six, and ten years, an individual may beget syphilitic children. The fœtus, a new organ as it were, seems to attract more especially to itself the diathetic outbreaks, the susceptibility for which had gradually become exhausted in the other parts of the economy; and I do but state the strict consequence of the observations collated above in forming an unfavorable prognosis for the progeny of persons so situated. Women appear to exercise a more decided influence upon the child in this respect, which cannot be surprising, since they first furnish the ovum for its formation at the moment of conception, and then the blood for its nutrition during the whole period of gestation.

The treatment to be employed will necessarily vary according to the period at which medical advice is sought; this is the main consideration. Mercury is indicated when the patient has just had an indurated chancre, or when he presents secondary symptoms. Iodide of potassium claims its place so soon as there is a question of tertiary symptoms. And yet I do not know whether experience stifles in me the suggestions of analogy; I do not know whether the recollection of the numerous cases in which mercury given alone has corrected the prolific vitiation of a family, acts involuntarily upon my mind; but I should be infinitely less inclined here than in the curative treatment of adults, to employ exclusively the preparations of iodine. We have so frequently, in the preceding observations, seen a woman, previously condemned to miscarry or to infect her children, afterward have a healthy progeny from the time of taking mercury, that I should be strongly inclined always to combine it with the preparations of iodine in similar cases. Perhaps it is correct to say that the aptitude for begetting syphilitic children belongs rather to the secondary than to the tertiary disturbances; but, until experience pronounces upon this hypothesis, as practice does not refute the corollaries which may be drawn from it in reference to the choice of the remedy, I think we ought to regard it as well founded, or at least to act as if it were so.

Thus, then, in the well-marked cases of which I am speaking, a treatment of about three months with mercury, or with mercury combined

with iodine,[1] is necessary to give the future couple all the assurance possible as to the health of their progeny.

But a more delicate case presents itself, and requires an answer. Treatment arrests all the secondary or tertiary manifestations; but has it the power of destroying the diathesis? In reality, the relapses of constitutional syphilis are numerous. In spite of treatment the most prolonged, the most strictly followed, and the best suited to the nature of the symptoms, it is never perfectly certain that they will not return. Consequently, we never have the positive assurance that the germ of syphilis is altogether extinct, that it will not reveal its survival by the birth of a contaminated child.

Such being the case (and all candid practitioners, Ricord at their head, and myself the most humbly, but not the less openly, avow at present the impossibility of absolutely preventing these relapses) we may, without affecting an exaggerated scruple, ask ourselves: "Is a man who has had symptoms of constitutional syphilis, or even only a chancre, whatever treatment he may have undergone, ever in a position to marry without danger for his future progeny?"

If called upon to answer positively and conscientiously *yes* or *no*, I confess that I should not dare to choose the former without fearing to betray the truth. And yet, if we go strictly by this rule, who shall escape, *quis sustinebit?*[2] To put an absolute *veto* upon the union of all those who

[1] When this combination appears to me to be indicated, I always prescribe mercury and iodide of potassium in alternate doses, *e.g.*, a dose of Van-Swieten's drops in the morning fasting, then a dose of the iodide some hours after; repeating this successive double medication in the evening. Two hours, at least, should always be allowed to pass between the ingestion of the mercury and that of the iodine. However inconvenient this mode of administration may be, I have constantly found it more efficacious than the exclusive employment of preparations in which mercury and iodide of potassium are combined.

[2] While preparing this portion of the work I have had a striking example of the difficulties of the part which the practitioner often has to play in such cases.

A young man whom I had treated and cured, two years previously, of simple chancres and suppurating bubo, wishing to marry, his future father-in-law came to me for information about him. As he pressed me and conjured me on my honor to declare to him whether his possible grandchildren ran any risk; as I observed him, moreover, to be a well-informed, serious man, capable, as I thought, of appreciating the motives of my reservations, I explained to him within what limits science permits us to give a guarantee of health in a similar case. No sooner had he learned that there is no *absolute* security in such a matter, than he closed the interview, and I have since heard that the proposed marriage has never taken place. Did I do quite right in revealing to this inveterate doubter the extreme scruples which experience makes it our duty to entertain? Would not language more in keeping with the real probabilities be legitimate under such circumstances? Were not the older medical men right in fact, if not in law, to promise, in such a case, a radical cure after two or three months of mercurial treatment? I propound: it is for each man to decide according to his knowledge and his conscience!

have had antecedents of this kind would be, in the midst of the excesses in our present state of civilization, to labor earnestly for the speedy depopulation of the earth. Consulted on this point, the medical man will have to establish classes. Thus:

If the individual has had only blennorrhagias and chancres; if the chancres were simple; if they date from more than eight months—marriageable.

If the chancre be of more recent date—marriageable after the lapse of time necessary to complete this interval.

If the chancre was indurated—marriageable, but after a mercurial treatment of from three to four months, provided that no general symptom have presented itself, and provided that the induration have been entirely dispersed for six or eight months at the time of the marriage.

If there have been constitutional symptoms, however slight they may have been, and whatever treatment may have been adopted for them—not marriageable, at least—1, unless the subject submit to a new course of treatment if the first have been incomplete; 2, unless he allows two years at least to pass to see whether any new symptom will appear; 3, or unless, subsidiarily, he encourages by a more active life, by forced exertions, by a change of climate, by the use of thermal sulphur-springs (Bagnères-de-Luchon, Aix en Savoie), the manifestation of a possible relapse, to be effected more rapidly than if he waited for the efforts of nature and time alone.

If he has had one or several relapses, especially if they have occurred in spite of prolonged treatment, if their concatenation indicate a tendency of the affection to pass into the tertiary stage—not marriageable, with very little chance of having the interdiction ultimately removed.

A cure obtained by a change of residence, by new sanitary measures, or by a profound and spontaneous modification of the constitution, can alone, and on condition that it has already continued for several years, justify a repeal of this sentence.

I am fully aware how defective these distinctions are. To have any value they must not be followed literally, but interpreted by a practitioner who makes allowance for the personal circumstances of each patient, circumstances which he alone can know, and for which it is reasonable to reserve a large space in the solution of the problem.

If we reflect, however, that rules were almost entirely wanting in so important a matter, I shall the more easily be pardoned for having written these few lines, radically insufficient, and more reprehensible than useful, if I had had the pretension to give them as a code without revision, but which will, at least, have the advantage of attracting to this subject the meditations of men capable of throwing light upon it, and of forming fixed laws for it.

I have stated the strict necessity of *submitting to the influence of mer-*

cury those who, having had constitutional syphilis formerly, and not having been treated, wish to marry. Is it necessary to go further? Is it necessary to subject to the same precautions those who have already undergone a treatment, but who have undergone it a long time previously? I could not venture to express my opinion on this point in an imperative form: and, nevertheless, when I consider, on the one hand, the numerous instances of men who fancy themselves perfectly cured of an old syphilitic affection, and who become the fathers of infected children; if I call to mind, on the other hand, those cases quoted above (see page 139), in which mercury taken by the parents, has had no preventive effect except for the child born soon afterward, and not for those coming later, I should willingly suggest the utility of adopting prophylactic treatment against any possible chance. Without making it an absolute condition, then, I should not refuse a provident treatment to a patient who, exempt from syphilis at the time, but having had it previously, should come, as is so frequently observed, to request it for the sole reason *that he is on the point of settling in life.* I should not refuse it; and if the past symptoms have been at all severe; if they appeared to me, from the patient's account, to have advanced ever so little toward the tertiary period; if their disappearance was of at all recent date; if, at the time of their existence specific remedies had been administered at all sparingly, I should even believe myself to be fulfilling my duty by taking the initiative and pointing out to him the propriety of undergoing a fresh treatment.

Second Case.—The marriage is concluded when the medical man is consulted; or he has to deal with one of those unions which dispense with inquiries as well as with formalities, and do not ask for the opinion of the faculty until after the affair is settled.

The duty which falls to our share may become a very delicate one to fulfil under such circumstances. The first and most urgent case is doubtless to subject to active treatment the individual affected with syphilis. But it is not in some days or in some weeks that the effect of remedies can correct the *dyscrasy* to such an extent as to enable the individual to furnish an irreproachable quota for the act of fecundation. It becomes necessary then, first of all, and by the most efficacious means of persuasion, or even of intimidation, to prohibit sexual intercourse provisionally.

But on passing from theory to its application, how many difficulties present themselves for the carrying out of such a prohibition! This is not the place to enumerate the impossibilities which oppose themselves to it. If there be conjunctures in which the performance of this function is, as Ricord has said, a compulsory social duty, is it not in this case in which the coldness of the husband, the resistance of the wife, interpreted by the relations, commented on by strangers, would give rise to suspicions the most injurious and unfortunately, in reality, the best founded?

Ought not the practitioner, in such a case, to make the dignity of his office give place to the much more sacred interest of the families whose ease of mind is in his hands? If it were only a question of protecting vice from the misfortunes which are its just punishment, I could understand his hesitation to enter into such explanations. But as the consequences of a fault here fall upon those who might repeat with the fabulist:

"How could I have done it if I was not born?"

the scruples of the medical man would be only a blamable prudery.

But if the subject be a man, expedients are known which suffice to render coitus unproductive; it is for the practitioner to judge from the character of his patient how far it may be allowable to explain these means to him, or to remind him of them. There is also another process for eluding the result feared, for avoiding the end without renouncing the means. The spontaneous periodical ovulation in woman leads to the determination of the periods at which the probability of fecundation is at a maximum, and of those, on the contrary, at which copulation is most likely to be effected without inducing conception. A man of much intelligence [1] has been pleased to approve of this latter procedure, while he stigmatizes the former and most useful with the name of *conjugal onanism*. I cannot see what advantage, religious or sanitary, our ingenious brother practitioner can find in thus perfecting the mechanism of unproductive copulation, in converting *a question of place* into *a question of time*, since the end, the intention, and the result would be the same on both sides. If his solution nevertheless calms some scruples, it may be employed and advised occasionally, but without assigning the same value to it as to the other for the attainment of the desired object.

These rules scarcely ever require to be applied except to the man. A woman who should find herself placed in the same position after her marriage would, I think, have little prospect of an amicable arrangement. Compelled to choose between a disgraceful confession and the danger of giving birth to a syphilitic child, she will very frequently accept an eventuality which affects her indirectly only, and which is merely probable, to escape a personal misfortune which is certain and present. And yet who can calculate the power which indispositions, feigned or exaggerated to suit the exigencies of the case, absence, coquetry, suspicions cleverly developed, the thousand defensive weapons which compose the arsenal of a woman beloved, would give her to defer, at least during the critical periods, sexual intercourse up to the time when treatment would afford her a sufficient guarantee! [2]

[1] Devay, Hygiène des Familles, t. ii., p. 76 and 113.

[2] If I should be reproached with the approval which I appear to accord to these manœuvres, I would point out that, apart from their prophylactic object, they are justified also by the essentially short period of time in which the employment of them would be authorized.

As for the treatment itself, it no doubt affords chances of preserving the child about to be born; but, however often repeated, it affords chances only, and not an absolute certainty.

In every case it must further be observed that it will be the more successful the earlier it has been adopted, the longer it has been continued, and the more the dose has approached that which shows the adequate action of the remedy by the manifestation of its physiological effects upon the economy. The possible inefficiency of the antisyphilitic remedy in this conjuncture is therefore, in my opinion, only a further reason for the practitioner to hasten and prolong the administration of it as far as lies in his power.

Third Case.—The medical man has been consulted too late; pregnancy has already taken place. Here the hope of preserving the fœtus diminishes to a notable extent, an extent dependent moreover upon the infection of one or both parents, and also upon the stage at which gestation had arrived at the time when the treatment was instituted. In doubtful cases there is only one line of conduct to be adopted; to prescribe antisyphilitic remedies at once, and to push the administration of them with all the vigor which the constitution of the woman, and the manner in which she bears the action of the remedy, admit of. I have already said what is to be thought of the influence attributed to mercury for the production of abortion. It is, on the contrary, as has been well established by Vannoni,[1] the most powerful preservative against it; and if it does not always oppose an obstacle thereto, this depends either upon the circumstance that the poison was in advance of its antidote, or that the susceptibility which so frequently accompanies gestation rendered it impracticable sufficiently to increase or to continue the doses of it. But to dare to accuse it of doing what it has not been capable of preventing, is never to have consulted the annals of science, in which instances of its admirable power abound! It will be well, then, to protest as formally and promptly as possible against the precept of De Blegny,[2] who gave instructions to wait, before treating a pregnant woman affected with syphilis, "until her pregnancy was somewhat advanced." I have already hinted, and I now repeat explicitly—syphilis is not unfrequently seen to attack the fœtus although the mother has, during her pregnancy, undergone a treatment generally regarded as complete. Here are two instances of this:

A woman[3] contracted syphilis in the fourth month of her pregnancy; she was perfectly cured of it, by appropriate remedies, before the seventh month. She was delivered of a female child which appeared healthy at

[1] Il raccogl. med., August, 1842.

[2] L'Art de guérir les Mal. vénér., p. 365.

[3] Edinb. Med. and Surg. Journal, 1851, p. 366.

first, but which, at the end of some months, presented copper-colored syphilitic maculæ, and an ulcer in the neighborhood of the *velum palati*. This child communicated the disease to a woman who had undertaken the care of it.

A woman,[1] six weeks pregnant, had pustules on the *labia majora*. She was treated for sixty days, at the hospital for venereal disease, in Paris, and went out cured. She was delivered, at seven months, of a weakly child, which had, thirty days after birth, moist pustules in the ano-genital region, and transmitted the infection to its nurse.

I have chosen these two observations intentionally from among all the analogous ones at my disposal, because they appeared to me the best adapted for showing the insufficiency of mercury. That specifics should be inefficient when syphilis existed in both parents, or in one only, but before fecundation, is by no means surprising, since they had then to struggle against the contamination of the semen, the ovum, and the blood of the mother, that is to say, of the elements for the formation and nutrition of the fœtus. But when, on the contrary, as in the two cases just quoted, syphilis has not commenced until after conception, the remedy had to purify the blood of the mother only; and, if it could not do that, its incapability of meeting this comparatively slight indication is a very evident proof of the failures to be expected when more is required of it.

But in compensation, as contrasted with these exceptional cases, how often have we not seen mercury permit, when it has been in too small a quantity only, abortion or fatal poisoning, and irrevocably put an obstacle and an end to these accidents, on the contrary, from the moment at which the patient has consented to take it in large doses! Such suggestions are so precious, and are so often required in practice for the purpose of dispelling the prejudices inspired by mercury, that I need not be afraid of appearing fastidious in multiplying instances which bring them into relief. The following are two of the most striking:

Beatty[2] had under his care a married couple who had previously been affected with venereal disease, but who had not for a long time had any visible symptoms of it. The wife had two children in succession, born one at seven, the other at eight months, which came into the world in a state of decomposition. Between the first and second pregnancy, she had gone through a course of mercury, but which was incomplete. She again become pregnant, in July, 1813. Beatty told her that he would not deliver her unless Colles certified that the new course of treatment to which she was about to be subjected had been pushed sufficiently far. She really followed it according to the instructions given her, and was delivered at the full time of a healthy child. Since then she has had several other children equally healthy.

A respectable mechanic and his wife went to consult Colles,[3] on the 5th

[1] Mémoire sur la transm. de la Mal. vénér. de la Mère à l'Enfant, p. 50.

[2] Pract. Obser. on the Vener. Dis., p. 267. [3] Op. citat., p. 291.

of August, 1834, for secondary symptoms, for which he treated them with mercury: before this treatment the wife had had two miscarriages. Two years afterward she was delivered of a child apparently healthy, but which, two months after birth, had well-marked syphilitic symptoms, and infected a young girl of thirteen, a servant in the family. It ultimately recovered, however. The father and mother then underwent a more complete course of treatment. Since then this woman has had another child, which was healthy.

My subject naturally forbids any digression into the rules best adapted for insuring the success of anti-syphilitic treatment in pregnant women. I cannot, however, refrain from pointing out some of the causes which sometimes contribute to diminish the efficacy of it. Thus the use of it is abandoned much too soon when the irritability of the *primæ viæ*, a complication almost inseparable from the pregnant state, makes mercurial treatment ill borne internally. We yield to this contra-indication without seeking to surmount it by carefully feeling our way and making repeated attempts; without remembering that it may be eluded by means of frictions, fumigations, clysters, and mercurial baths. This last omission has struck me in more than one case of this kind. I point it out especially on account of the name of the author, to whom one is surprised to find this reproach applicable, in the case recorded by P. Dubois, published by Bouchut.[1]

A second cause of failure might be, that the medicine has been taken by the mother only. When a married woman, the subject of syphilis, goes to consult a medical man, the latter believes himself to have fulfilled the indication to its whole extent if, when he has prescribed the appropriate remedies, he watches over the use of them until the moment when they appear to have neutralized the morbid principle. Perhaps, however, there is something more to be done. Perhaps, if the husband be syphilitic, he should also be required to undergo a course of mercurial treatment in the interest of his child. The facts related in the first part of this work (p. 16 et seq.) certainly do not prove the reality of the influence which Hunter and Nisbet attributed to the semen of a syphilitic father upon the already formed child; but they appear to me, however, to be of a nature to leave some doubts in the mind. For my part, then, if a woman had already had, in spite of full treatments, several children affected with the syphilitic diathesis, I should follow the example set by Colles in the preceding observation, and should subject the husband as well as the wife to the use of anti-syphilitic remedies. I should adopt this plan *a fortiori*, if the husband presented at the time any characteristic constitutional symptom: and I do not see why we should not choose by preference the pregnancy of his wife, a period in which continence, a powerful auxiliary in these treatments

[1] Op. citat., p. 879.

would be more easy to him, to prescribe for him remedies to which he must have recourse sooner or later.

Another circumstance, more easily verified, may also interfere with the preservative effect of the specific treatment. Applied to both parents, this treatment has been sagely combined, followed perseveringly, and well borne. And yet the child is born with unmistakable symptoms! This is because too much time has elapsed between the cessation of the treatment and conception. Its effect upon the manifestations of the diathesis was striking; but the diathesis itself has persisted and, gradually accumulating its force, has effected a discharge which, in the absence of the child, would perhaps, at a later period, have fallen upon some organ in its parents, but of which it has been the victim, because the effort necessary for its production has excited in their organism one of those revolutions which cause the diathesis to pass from the state of a force to that of action.

The observation by Simon (quoted p. 139) shows that things may occur in this way, since the first child of a man treated with mercury escaped syphilis, and the four following were attacked by it.

Must we, with these *data*, lay down the rule of waiting until pregnancy occurs before ordering mercury for a woman who has previously had syphilitic lesions which were badly treated? The sequence might be a logical one, but there could not be a more pernicious one in practical medicine. In fact, if we could know beforehand, and two or three months beforehand, the moment of conception, it would perhaps be preferable to defer the administration of remedies until then. The constitution being recently saturated with their specific influence would find itself, at the time of fecundation, so to speak, at its *minimum* of syphilis, and at its *maximum* of mercurialization. But this hope being only chimerical, it is better, it is absolutely requisite, to adopt our precautions when we can, and to commence the treatment, when the indication for it exists, as soon as the patient is placed at our disposal, with the option of repeating it whenever pregnancy adds a fresh desire for security to fresh motives for anxiety.

This is, in fact, the inference which I draw from the preceding considerations, and I do not hesitate to lay it down as a rule of conduct because it meets the rational suggestions of theory as well as the most timid desiderata of practice. To repeat the administration of anti-syphilitics at each pregnancy will doubtless appear to many to be too strict a rule, or an excess of pusillanimity. But I do not apply it either to all patients or all cases. I should not wish to make it a general prudential measure, applicable even to those who, in spite of previous syphilis, have already had several propitious confinements. But when, on the contrary, experience has already made itself heard, when this fatal stigma has already killed or branded one or more children, then I refuse to regard a mercurial treatment, even though followed by a third normal delivery, as a perfectly suf-

ficient guarantee of the health of a fourth child; and during this last pregnancy, I should have neither scruple nor hesitation about advising, while there is still time, the only complement of safety which the parents can have, the renewed administration of specifics. The following case will show whether my distrust springs from unfounded fears.

Mr. P——[1] had had syphilitic ozæna, of which he was cured by Plenck's solution. He married a girl who, when eighteen years old, had had a chancre in the vulva, of which she was slowly cured by the internal and external use of mercury. Since that time neither of them had presented the least symptom of syphilis. The first child was born healthy, but was covered, at the end of a fortnight, with an eruption of miliary vesicles, which increased in size, burst, and left behind in some places brown spots, in others ulcers. Treated unsuccessfully with æthiops mineral, it sank. The mother had six other children which presented the same lesions and died. When pregnant for the eighth time she was put upon a course of calomel. The child which was then born is a boy, who has continued healthy up to the present time. At the ninth pregnancy, the mercurial treatment was repeated and the result was also propitious. During the tenth pregnancy recourse was not had to the same means; the child, healthy at first, also became covered with syphilitic eruptions, and sank in marasmus at the end of six months. The mother, pregnant for the eleventh and last time, again took mercurial pills, and brought into the world a female child, which has continued healthy up to the present time.

Could we desire the proof and counter-proof more clear, more frequently repeated, more free from complications than this case furnishes them? And, by furnishing the peremptory proof of the absolute necessity, in certain cases, of repeating the treatment at each pregnancy, does it not make us feel the utility of following this rule whenever suspicious antecedents, or a first pregnancy cut short by abortion, inspire some alarm as to the issue of an actual gestation?

I propose this question here, but I do not wish to do more than propose it; a child having been conceived of parents manifestly syphilitic, is born apparently healthy. But one or more children begotten before it by the same parents have had syphilis. Must we wait until symptoms appear before submitting this last child to treatment? Would there not be more chance of saving it by commencing the administration of remedies, in moderate doses, from the very moment of its birth? However reserved I may wish to be on this subject, I must nevertheless say, that if its predecessors had not only had syphilis, but had sunk under it in spite of treatment instituted on the appearance of the symptoms; if, lastly, the father and mother had not, since that time, employed any remedies, the preventive administration of mercurials to the last born child would, in my opinion, find a very sufficient justification in this aggregate of circumstances.

[1] Oesterreichische medicinische Wochenschrift, 1842.

[It is unquestionably true that no person who is the subject of evident symptoms of syphilis should be permitted to marry, inasmuch as in that stage the probabilities of conveying the disease are so great, notwithstanding the few cases which are reported where the contrary has obtained, that no prudent surgeon would for a moment countenance or sanction the risk. But with regard to the period which should elapse after the appearance of the initial lesion and the permission to marry, exception may fairly be taken to the rules laid down by M. Diday. He says (p. 192) it will be "well to enjoin six or eight months' delay (counting from the first appearance of the chancre) if the chancre was a simple one; and in addition to this, a course of mercury, if the chancre was indurated." If the chancre was a simple one, it is not by any possibility constitutional and can never infect the system, hence the delay of six or eight months is entirely unnecessary, and if the chancre were indurated, in other words, if it is syphilis which has to be dealt with, then the delay of six or eight months is altogether too short for purposes of safety to mother and child. It is evident that our author has not drawn the distinction which exists between the simple ulcer and the syphilitic ulcer. No person should be permitted to marry until, at the very least, twelve months have elapsed, not since the first appearance of the chancre, but since the disappearance of the last symptoms; and even this limit of time is none too long, the period being sometimes lengthened to eighteen or twenty-four months. It does sometimes happen that a parent, notably the mother, may have a long period of latency, showing no signs whatever of the disease, and yet bring a syphilitic child into the world. This has been shown as possible in the cases reported by Keyes, of New York ("Venereal Diseases," etc., 1880), and Grefberg ("Archiv für Dermatologie," etc., 1879), in the former of which the mother presented no symptoms of syphilis for three years, and in the second for eleven years, and yet were capable of giving birth to syphilitic children.

These cases, I believe, occur more frequently in instances where the mothers were diseased than where the fathers were at fault.

In the treatment of such cases, although the general advice is good that "mercury is indicated when the patient has just had an indurated chancre, or when he presents secondary symptoms, and iodide of potassium . . . so soon as there is a question of tertiary symptoms," this rule must not be too closely adhered to. Mercury is of use even in the later, or, as Diday calls it, the tertiary, stages of syphilis, and the iodide of potassium really plays in the majority of cases only a secondary or adjuvant part. In treating hereditary syphilis mercury plays a very important part, far above any that the iodide of potassium can, and the belief which in some quarters obtains that children bear mercury badly—of course I refer to syphilitic children—is a great mistake. If there be any drug which promises a hope of recovery to the unfortunate infant it is a proper and thorough use of mercury. When the combination of mercury and the iodide of potassium

is deemed necessary, the advice to give the two drugs separately is an excellent one, inasmuch as it allows of increasing the dose of either one independently of the other, a point which it is sometimes important to observe.

With regard to the question of marriage, it may be laid down as a broad rule that the existence of an antecedent syphilis does not necessarily debar a man from marrying. But it must be clearly understood that this is possible only within certain limitations and after certain precautions. If the attack have been a mild one, of a benign type, a period of twelve months' immunity from all symptoms, *i.e.*, dating from the last appearance of symptoms, is usually sufficient for all practical purposes of safety. If the syphilis have been severe, notably if ulcerative lesions have been present, then a longer period of probation should be enjoined, certainly eighteen months, and possibly twenty-four or thirty-six months, always from the date of the last manifestations and not from the first appearance of the initial lesion.

If the patient have had only gonorrhœa or simple chancres (chancroids), then the period of eight months' delay is useless. No constitutional infection can occur to the man, and consequently none to wife or offspring. All that is requisite is complete cure of both these diseases before marriage is consummated.

The opinion given by M. Diday in the instance mentioned by him in the footnote to p. 193, when viewed by this light, was an error of excessive caution and clearly fallacious.

In the advice given where constitutional symptoms have been present and treated, none being apparent at the time, I think M. Diday is at fault. In the first place, what is the use of subjecting the patient to a new course of mercurial treatment? So doing would have the effect of retarding the outbreak of manifestations, supposing the diathesis to still exist; the waiting two years would be amply sufficient in the majority of cases to allow symptoms to make their appearance, with the decided advantage that nothing had been done to retard their advent and permitting the surgeon to be more positive in his opinion.

The use of the sulphur baths is permissible, but in the majority of cases, in this country at least, of doubtful advantage.

I believe, therefore, that it is better to wait for the disease to declare itself, giving it plenty of time to do so, unhampered by any treatment, than to subject the patient to a course of mercury in a hap-hazard manner in the hope that it may prevent any manifestations from coming on and of curing the disease.

In those instances where the marriage has already taken place, if either party show signs of the disease, undoubtedly treatment should at once be instituted, especially in the cases where the mother is syphilitic, in order to give the child every opportunity to overcome the chances of infection.

This should be continued throughout the whole period of gestation, even if the mother show no symptoms of her disease. As regards the father this is not so essential, and I say this with a certain amount of reserve. Skeptical as I am of the transmissibility of syphilis by the semen, the only motive that I can see for placing the father upon treatment would be to prevent him from infecting his wife and thus transmitting disease to his child. Such a course is proper and certainly one to be pursued, but the object of so doing should be clearly borne in mind.

The means suggested by M. Diday, "the expedients to render coitus unproductive," are of no practical utility, because patients will not follow them, and besides they do not increase the chances of immunity to the wife from a direct infection from the husband. The less said about them, therefore, the better.

In cases where gestation has not occurred, the syphilis should be treated for obvious reasons.

I do not think at the present day physicians would hesitate for a moment in placing syphilitic pregnant women under treatment on account of the fear of producing an abortion. It is quite satisfactorily established that no reasonable danger exists on that score; indeed, the best means of preserving the life of the fœtus is in the administration of mercury to the mother while she is carrying the child. As to the most appropriate treatment for attaining that end I shall say something further on.

The problem, during how many pregnancies treatment should be continued, is not an easy one to solve. I believe myself, with M. Diday, that it would not be wise "to regard a mercurial treatment, even though followed by a third normal delivery, as a perfectly sufficient guarantee of the health of a fourth child," and should certainly continue for two successive pregnancies to adopt treatment, even though the mother should have shown no symptoms of the disease meantime. But of course much would depend upon the severity of the antecedent symptoms in the mother, and we must bear in mind the natural tendency which the disease has to lose its power of infecting the fœtus as time goes on.—F. R. S.]

II.—*Conditions connected with Parturition.*

We have seen that the dangers which threaten the fœtus in traversing the diseased genital organs of its mother have been greatly exaggerated. But if infection during parturition be one of the most uncommon facts in the history of congenital syphilis, it is far from being an impossibility. The accoucheur ought, therefore, to take the same precautions against it as if instances of it were daily observed. He will do this the more willingly because the contagion to which the child is exposed at that time may reach himself during the manipulations required of him.

In classical treatises the lesions communicable during parturition are

pretty generally limited to primary chancre alone. I cannot too strongly protest against this optimism. Mucous tubercles ought to inspire the same fears. Are they (I mean the *non-congenital*) contagious or not? This is not the place in which to discuss this great question, and the solution of it is not necessary here. For even if we should conclude with Ricord against their contagiousness, it would remain none the less true, still according to Ricord, that a chancre on the point of transformation into a mucous tubercle, and arrived at a stage to simulate the latter, even to the eye of a very skilful practitioner, may still be perfectly inoculable.

But, it will be said, if the mother has mucous tubercles, whether transformed or not, she is affected with syphilis. Consequently, the fœtus has already contracted it in her womb ; and can no longer contract it during parturition. What then is the advantage of striving to preserve it therefrom? This mode of reasoning assumes that every syphilitic woman infallibly communicates the disease to her offspring ; it assumes further, that if syphilis has been contracted by the mother after the seventh or eighth month, it is as communicable to the fœtus as if contracted at the commencement of her pregnancy. This is enough to show how little foundation there is for the feeling of safety with which it could inspire the accoucheur.

The precautions to be adopted in such a case are of two kinds ; they apply either to the mother or to the child.

On the side of the mother, it is very evident that, without neglecting the other indications, the treatment must first of all be local, and must tend to repress as quickly as possible the contagious lesions which exist, whether in the passage itself, or in its vicinity, about the anus, in the groins, etc. If the practitioner has not time to effect a complete cure of the chancres, he must endeavor, at least, to bring them, before delivery, to the reparative stage. It is not for me to treat here of the means adapted to fulfil this end. I shall recommend, as particularly prompt against mucous tubercles, chlorinated lotions, followed by the application of calomel. It is very rarely that the most confluent patches are not effaced in a week, under the influence of this treatment, the discovery of which is due to the practical genius of Ricord.

I cannot insist too much upon the necessity of expedition in such conjunctures. Many practitioners hesitate about curing local lesions before the patient has been subjected to general treatment. Others are unwilling to adopt too active measures, such as cauterization, in a pregnant woman. These scruples can be discussed anywhere else, but are out of place here. We must act as soon as we are called in ; the treatment must follow close upon the diagnosis. Neither must the frequent occurrence of premature delivery in syphilitic women be forgotten. Neither must it be forgotten that the vital modifications undergone by the organs of generation during the last months of gestation render the cure of lesions in

them much more slow and much less certain: for instance, the vegetations which are often seen to recur abundantly in spite of the greatest care. If then we are never sure about the time left us before delivery; if we are, further, anything but sure about the time which the symptoms will require for their cure under these exceptional conditions, do we not see therein a sufficient reason for setting to work immediately?

But the medical man may have been called in too late; he does not recognize the presence of the chancre, for instance, until the moment of the commencement of labor. Must he then remain inactive? Certainly not. It will suffice for him to destroy momentarily the virulent secretion of the ulcer and then to cover it, as an additional precaution, with a protecting varnish. He must, therefore, cauterize freely and deeply with nitrate of silver all the lesions which are contagious or suspicious, and then smear them with collodion. Several coats of this impermeable covering, laid on successively, will in great measure neutralize the chances of communication to the fœtus. If the labor should be much protracted these precautions should be repeated.

On the part of the child, the precautions are limited:

To expediting as much as possible the conclusion of the labor when it has once commenced;

To keeping the membranes intact as long as possible if there be no contra-indication; the flow of the liquor amnii, during the passage of the head, serving to keep it from coming into contact with virulent secretions;

To hold the finger, or what is better, a thin piece of softened horn or ivory, between the contagious lesions of the mother and the body of the child, while the latter remains stationary at the point where they exist;

To inject oil several times during the whole time of labor, to obviate or lessen friction;

Lastly, immediately after birth, to wash carefully all the parts of the body of the child which have been longest exposed to contact with the virulent pus, or which are known to be the usual receptacle for it, especially the eyes, the lips, the nostrils, the anus, and the genitals. If any excoriation should be observed, it will be prudent to cauterize it, without delay, with a stick of nitrate of silver.

III.—*Conditions dependent on the Persons among whom the Child is brought up.*

The relations between the child and its nurse must occupy the first place here; those between it and other individuals, the second.

A child born healthy, of healthy parents, cannot, I will assume, be suckled by its mother. How are we to proceed to prevent the nurse to whom it is intrusted from communicating the venereal disease to it?

This danger, it must be confessed, is not sufficiently taken into ac-

count by people of the world. In spite of repeated distressing occurrences, the medical man is much too rarely asked to give an opinion as to the *special* state of health in the nurse. Satisfied with her good looks, her simplicity, which is sometimes affected, and the rusticity of her accompaniments, the father intrusts the fate of his child to her without inquiry; and of the questions addressed to her concerning her antecedents, the most important is certainly the last to be thought of.

The reserve of families on this point is further sufficiently explained by a very natural feeling of delicacy. But what is to be said of the medical man (and there are many such) who omits to include in the examination required of him, the careful inspection of the genital organs of the future nurse? It is, in my opinion, an unpardonable omission; no extraneous consideration, no certificate of morality should exempt the woman from this ordeal; and one who took offence at finding herself subjected to it would be precisely one in whom I would carry it out with the most distrust and with the greatest care. On exploring the vulva and neck of the womb, the anus, the groin, the nape of the neck,[1] and the back of the mouth, accusatory signs or vestiges of a past or present infection will sometimes be found, and their absence, if verified, will, on the contrary, be one of the most reassuring guarantees for the future of her foster-child. But these are not all the precautions required, and we must be careful not to draw too hasty a conclusion.

Rosen (op. cit., p. 540) gave a prudent piece of advice in recommending an examination, not only of the nurse, but of any child she may be suckling at the time. This is the opinion of an enlightened practitioner, and Rosen had probably learnt from experience what I have established categorically above, viz., that when the nurse transmits syphilis to a child, this syphilis has almost always been communicated to her by a previous suckling affected hereditarily. It is from that source that the chief danger really proceeds; to it, therefore, must the strictest investigations of the practitioner be directed.

To obtain the greatest possible degree of security on this point, it is not enough to verify the health of the child presented to us; for one may be *hired* to play this part. See whether it is really suckled by this nurse. Inquire whether she has, or has not, had others; who their parents are; in what state of health they have been returned to those parents, and what usual diseases they have had previous to weaning. Do more; go into the neighborhood of the nurse's abode; examine her neighbors; see whether there is any child at the breast there whose condition might compromise the one you are about to send to live near it. Question the husband of the nurse. Take advantage of the envy which nursing well paid, or prom-

[1] Indurated glands in the groins, and above all in the posterior cervical region (about the boundary line of the hair) ought, even without any actual symptom of syphilis, to make us reject without reprieve the nurse who is the subject of them.

ising to be so, always excites in the acquaintances of one who is about to have this windfall. Manage adroitly, but without compromising her, to lead her neighbors, too happy to do this good service to their friend, to dilate upon her antecedents. If you have learnt nothing exceptionable, set your mind at rest; to come out unscathed from such an ordeal, the virtue of your nurse must equal her good state of health.

I do not pretend by these words to have traced out for the practitioner the whole programme of his duties. I merely say that if I had a child I should make a point of acting thus; and I leave to each of my professional brethren the care of deciding how far it suits him, in a given case, to impart to his intervention a character which belongs rather to the father of a family than to the medical man.

The infection which did not exist in the nurse at the time when the child was intrusted to her may be contracted by her afterward. This is the reason why people prefer keeping her in the house, and carefully watched, to leaving her at her home without any possible authority over her actions. Sometimes, however, the license of a town influences her in a manner opposed to the provisions which had induced the adoption of this course; and as, otherwise, the general health of the child cannot fail to be strengthened by country air, sometimes advantages accrue from sending it into her neighborhood. But the considerations which may incline the scales one way or the other depend so much upon entirely personal conditions that it would be rash to attempt to offer an absolute solution here. I have said enough, however, to render intelligible the necessity of keeping the nurse under observation during the whole duration of the functions intrusted to her.

In certain cases it is not against the duplicity of the nurse that we have to be on our guard; it is her ignorance which requires to be enlightened. Under the reassuring title of cracks she may without suspecting it, apply to her nipples mucous pustules or true chancres, lesions which she transmits all the more easily because she does not believe them to be contagious.

As regards the nurses who, knowing themselves to be diseased, wish to continue suckling, the medical man, if he does not succeed in dissuading them from it, can only advise them always to give the breast which is not affected, avoiding all contact, however transitory, of the lips of the child with the other. If they are both affected, she should make use of nipple-caps; but this measure affords a false security only, and if he have any influence over her, it is best to employ it in advising either that the child be transferred to a healthy nurse or fed artificially.

As regards the influence of the milk furnished by a syphilitic nurse, I have nothing to add to what has been said on this point in the chapter on etiology.

The danger sometimes proceeds from persons from whom it has been

least expected. I have shown sufficiently, by examples, to what sources of contagion, fortuitous or voluntary, accidental or premeditated, the weakness of the new-born child and constant want of care expose it. But to have them made known is the only means of procuring the avoidance of them; nothing can replace for this purpose the preliminary investigation (the rules for which I have pointed out), and repeated and unexpected visits made by the parents at the house of the nurse. The eye of the father is here at the same time that of the master; he will know better than any one else how to discover the dangers to which imprudence, inattention, or profligate habits, expose his child.

If a nurse affected with venereal symptoms consults the practitioner, he must warn her against the consequences of certain very common practices, reputed harmless, but which are in reality very frequent causes of contagion. Many women who have a chancre in the vulva employ their hands either to dress it, or to still the itching which exists in its vicinity; then, with the same fingers, they take the breast out of the dress to give it to the child, or even handle the nipple to excite erection in it, or to bring it within reach of the child's lips; the virulent pus is thus placed immediately in contact with the mouth of the suckling.

Other women have syphilitic lesions in the cavity of the mouth; if they then make use, as so commonly happens, of their saliva to cleanse the child; if, from excess of care, they retain for some moments in their mouths, for the purpose of warming it there, the water destined to the same end, it may happen that in washing their nursling they inoculate it with a chancre.

These accidents, of which instances have been seen, and which have been quoted by Bertin and Ricord, will become the object of very important prophylactic suggestions. Taking into consideration the carelessness of women in the country, we cannot make these suggestions to them too clearly or too strictly. We need not be afraid of darkening the picture, and, instead of possible contagion, leading them to anticipate it as certain if they infringe these rules.

Section II.

TO PREVENT A CHILD ATTACKED BY SYPHILIS FROM TRANSMITTING THE DISEASE TO PERSONS WITH WHOM IT IS IN RELATION.

The most exposed of all such persons would appear, in theory, to be the mother, who during nine months has the closest possible relations with it. If intimate contact, identity of temperature, and community of nutrition be adequate conditions of propagation, assuredly, being subjected to them more than any one else, and incapable of eluding any one of them,

she ought to experience their influence in all its plenitude! We have seen above how far practice confirms the data of reason. But, whether opponents or advocates of the reality of this mode of infection, all recognize that it involves nothing contrary to the laws of physiology. All consequently must agree in this practical conclusion, viz., that, after having had a child by a man affected with syphilis, the health of the woman ought to be watched more carefully than before; and that, if any obscure ill-defined disorders supervene in her, the diagnosis of which leaves the least doubt, it is an indication to administer to her, if only as a test, anti-syphilitic remedies, especially iodide of potassium.

But it is not from this quarter that the most serious fears and the greatest difficulties proceed. When a child is born under conditions of parentage which render the early development of syphilis in it probable or possible, it furnishes a sanitary and moral problem, the solution of which, weighing fearfully upon the family and the medical man, has not been found and cannot be found completely. It is a question of reconciling the interests of the child with those of the nurse who is about to take charge of it, interests the more to be respected in that the one party is innocent of the disasters which strike it, and the other can scarcely ever be tied down permanently to refuse or to accept, with a full knowledge of the actual state of things, the risks which she is about to incur.

One plan, rational enough at first sight, would consist in warning the nurse as to the condition of the child intrusted to her. She would then be free to make up her mind, would expose herself voluntarily only, and would be able to adopt all the necessary preservative measures. But experience has shown that this course only frees the parents from responsibility at the expense of the health of the child. Nurses, in general, are alarmed at such a proposition; and those who, attracted by the prospect of an indemnification, consent to incur risks so serious, always find means of eluding them by depriving the child of its natural aliment through the substitution of another nurse, an animal, the feeding-bottle, or, what is still worse, when a strict supervision renders these frauds impossible, by refusing it the breast as often as possible.

A means of solving the difficulty sometimes presents itself. If the mother be capable of suckling her child, it is always to her that it should be intrusted. Besides the advantage of not endangering any one (for we know that the suckling does not infect the breast of its mother), we shall have the further one of being able to administer anti-syphilitic remedies to it in the mildest form. In fact, whether the syphilis proceeds from the father or the mother, the latter has always felt its influence more or less, either by coitus, or by the *return shock* (see p. 142). The administration of mercurials, if not formally indicated, is therefore, at least, never contra-indicated in her as in a strange and healthy nurse. If, consequently, the practitioner believes it necessary to prescribe specific remedies, he will not

meet, on her part, either with opposition or lukewarmness in carrying out this treatment, which, although often insufficient for the cure of the child, is, however, always a valuable auxiliary to the remedies administered directly to it.

Unfortunately the same cause which has infected the fœtus has most frequently dried up or vitiated the sources of the mammary secretion in the mother. Nothing remains but a milk scanty, thin, serous, impoverished, soon exhausted, and the more pernicious because the child, already debilitated by the common influence which weighs upon these two beings bound up in each other, has need of more reparative nutriment, so that the strengthening aliment furnished by a robust and healthy stranger will more than counterbalance for it the mediate medication which it might have received from the breast of its mother. Nursing by the mother, therefore, can very rarely in such cases be carried out under conditions of which the practitioner can approve, and he is forced to recur to the choice of a nurse.

Syphilization, it is true, points out the solution of the problem, but in perspective only. If it should one day fulfil its promises, we might, by syphilizing the nurses, render them insusceptible of contagion. Then, as I have already said elsewhere,[1] "there would be breasts for all those little beings, innocent victims of the faults or the credulity of others. Every suspicious child would meet with its syphilized nurse. The egotism of the rich would no longer have a pretext for sacrificing to the welfare of a scion the health of a villager, and frequently that of her whole family; and hospital authorities would no doubt hasten to set the example of this useful innovation, by exciting the zeal of their paid nurses to undergo the salutary operation."

But while waiting until this dream—this hope, if the expression be preferred—becomes a reality, are there not other means of attaining the same end, or at least of approaching it? The following are those which I believe may be recommended, having already employed them successfully.

If the child present at birth, or a few days later, symptoms of syphilis, and the mother is at all capable of suckling it, we must insist upon her doing so. A nurse who would consent to take such a child, and really to give it the breast, would be extremely difficult to find; and I should not place more than a half confidence in such promises. Moreover, is it permissible to impose, even upon one who declares herself willing to accept them, chances of which she never knows the whole gravity? In every case, if the medical man is not consulted until after the bargain has been concluded, he must rejoice for the sake of the child; but he ought, at the same time, to require of the parents that they shall cause the nurse to be carefully watched, and treated as soon as she shall present any vis-

[1] Gaz. méd. de Paris, 1852, p. 539.

ible symptoms. He will also, on the one hand, point out to her the signs by which she may recognize the invasion of syphilis; on the other, the preservative measures, of which I shall presently speak.

But this is not the most common case. In a very large majority the child is born healthy, and the manifestations of syphilis do not supervene until several weeks after. Under these conditions, apparently more simple, the embarrassment of the parents and of the medical man is, on the contrary, still greater, because nothing frees them from their responsibility. In fact—

When visible lesions showed the existence of the disease, the nurse, enlightened by the aspect of the child, was at liberty to take it or to refuse it. Here all is latent; if she accept it, she does so unsuspectingly; if she suffer therefrom afterward, she cannot be told that she has wished it, because nothing had warned her of the danger which she incurred. Are we to reveal to her by hints, by certain insinuations cleverly *veiled*, the condition of the child? I have already explained the serious inconveniences which result from these confidences. However reservedly we may think we have conveyed them, they cannot do less, without remaining unintelligible, and thus failing altogether in their object, than give the cue to the nurse, and lead to consequences unfavorable to the health of her foster-child. It would, moreover, be highly repugnant to me to sacrifice a healthy, respectable woman, in the prime of life, to the very problematical future of a child which so many causes of death, besides this one, threaten in consequence of the infection of which it bears the germ.

The practitioner finds here in his duties strict limits to his toleration. He may be the confidant of the parents; let him never become their accomplice.

In hospitals a more open course is pursued. On giving to the nurse a suspected child, she is warned of its condition and made acquainted with the symptoms which may develop themselves in it. She feeds it artificially, and brings it to the hospital as soon as it presents any visible symptom. But, if this be the most moral course, it is very far from being the most advantageous one for the child.

In private practice we are compelled to act upon other data. Let us estimate them according to the various circumstances which present themselves.

One of two things occurs: either the nurse remains in the house of the parents, or else she returns to her own home. In the former case the course to be pursued is most simple. It suffices to examine attentively, during the first months, the condition of the child. If there appear about the mouth, or elsewhere, any symptom of which the contagious property is probable, there is time, as they have been observed at their commencement, to repress them immediately by cauterization, while working for the same purpose by means of the general treatment which may, in such

cases, have been commenced from the moment of birth. Having thus the child under our hands, being free to examine it at any moment, knowing the period, the regions, almost the precise spot in which the most dangerous lesions, in respect to transmissibility, may declare themselves, a vigilant practitioner will generally succeed in becoming master of them. With the aid of some slight preventive measures pointed out to the nurse, he will thus have been enabled to cure the child, without having exposed her who gives it the breast, and without having been compelled to interrupt lactation.

In the country, far from all constraint, from all supervision, the same system no longer furnishes the same guarantees. Must we then, to place the nurse in safety, tell her all? No; and the following is what I have done in a case of the kind. I wrote to the medical man of the village in which the nurse lived, and made him, with the consent of the parents, a general confession, for secrecy concerning which professional discretion was, on his part, a sufficient guarantee. I begged him urgently to examine the child very frequently, and as soon as he should observe the least contagious symptom which he could not neutralize immediately, to suspend natural lactation. He carried out my instructions extremely well. To alarm the nurse less, he disguised, by various pretexts, the frequency of his visits, sought to meet the child as if by chance when taken out, alleged the fear of thrush as a reason for examining the mouth, the wish to see whether cleanliness was observed for exploring the genital organs. The nurse soon unsuspectingly accustomed herself to meet this inspection half way. So much care led to a happy result. The child, which I had been treating since its birth, had some mucous tubercles at the commissures of the lips. Before they were well marked, and while they still passed under the name of simple cracks, my colleague cauterized them freely with nitrate of silver,[1] and directed the nurse no longer to give it the left breast, the nipple of which was a little excoriated. Other specific eruptions appeared on the hairy scalp and inner part of the thighs; but as their site did not inspire the same fears of contagion, they were treated with the ordinary topical applications only. In short, the child was thoroughly cured, thanks to the intelligent co-operation of my colleague, without having ceased for a single day to be suckled by its nurse, who remained healthy. Is this only a further fact in favor of the non-contagiousness of congenital syphilis? I do not know how it will be appreciated; but it has appeared to me worth relating to explain the course to be pursued in similar cases, when, at least, we can meet with an auxiliary so adroit and so devoted as the one who contributed so largely to the success of my innocent diplomacy.

Few families, it must be confessed, few practitioners, and few writers,

[1] If these symptoms had resisted treatment, I should have caused the child to be suckled by a goat.

take so seriously in hand the interest of nurses; while some of the latter, finding a pecuniary advantage in rearing a suspected child, voluntarily incur the dangers of contagion, but seek to diminish them as much as possible. The practitioner therefore very frequently has occasion to point out to the nurse the precautions to be adopted to protect herself from the contagious influence of her foster-child.

In these cases, our first care must be to recommend them to condemn immediately to inaction either breast of which the nipple is excoriated. As soon as they observe the slightest fissure, they must use the other breast exclusively in suckling, to give that which is cracked time to heal thoroughly. Though the nutrition of the child suffer somewhat thereby, and though it may be necessary to have recourse to the feeding-bottle to replace the quantity of natural aliment of which it is temporarily deprived, this measure is strictly necessary. If carried out more attentively, it would often prevent the infection of the nurse; for Swediaur, Vassal, Colles, Egan, and others, believe that she may, with impunity, continue to suckle a syphilitic child so long as there are no fissures in her nipples. The immunity is, moreover, quite in keeping with the general laws of syphilitic contagion. We know, in fact, that without being an indispensable condition thereof, the previous removal of the epidermis greatly favors its accomplishment. I repeat: even without a solution of continuity, the nipple may easily be affected by chancres or mucous tubercles, since, according to the remark of Egan himself, the attendants of the child, the *dry nurses*, sometimes contract the disease from it by simple contact. But in the end, it is a great point, in a transmission which includes so many possible modes, to be able to annihilate that which is at once the most frequent and the most active.

There are still other means of diminishing the chances of contagion for the nurse. The nipple-cap fulfils in this respect valuable prophylactic conditions. A woman, mentioned by V. Cl. Guérard,[1] succeeded in suckling with impunity a syphilitic child by confining herself to smearing her nipple with fat before giving it to the child, and afterward washing it with a solution of chloride of lime. For the same reason Lallemand recommends[2] washing the apex of the breast, as soon as it is removed from the lips of a suspected child, with a solution of bichloride of mercury, then with milk to remove the mercurial taste which might afterward prove repugnant to the child. This advice, founded, as it appears, upon the supposed property of neutralizing the virus *in situ*, seems to me less worthy of being followed than the other.

It is not alone by the act of suckling that nurses are exposed to infection. Any contact with a diseased child may communicate it to them. From this I draw the inference (which is it appears to me incontestible, from the cases related in the third part of this work), that, independently of the

[1] Journ. de Siebold, loc. cit.

[2] Journ. univ., t. xxvii.

nurse, all the persons who have habitual relations with a syphilitic infant may thereby contract venereal diseases. The prophylactic measures proposed above are therefore perfectly applicable to them.

Lastly, the nurse, once infected, may become the agent of transmission to her husband, her own children, etc. The medical man must therefore warn her as well as them of the danger which would exist in imprudent relations with each other, so long as the disease persists in her.

[Infection of the fœtus during parturition is so exceedingly rare that I believe very few accoucheurs have seen cases of the kind. Still it is possible that certain venereal lesions may be communicable to the child during its passage into the world. I say certain venereal lesions with intent, because I differ from M. Diday as to some points in his belief on these subjects. First, as to the question of the conveyal of syphilis in this way. If the mother have at the time of her delivery, an unhealed initial lesion or mucous patches on the genital organs, then the child will also be under the influence of the disease even though it may not at the time of birth show any signs of it. Under such circumstances the child would naturally not be obnoxious to another infection, hence the initial lesion or mucous patches of the mother would be harmless and inoperative to the child. As regards the inoculability of mucous patches, that point at the present day has been answered in the affirmative, and too many cases of positive inoculation exist in medical literature to permit of any reasonable doubt upon this point.

The next question, can the infant contract a simple chancre (a chancroid) during its passage through the maternal genitals, may be answered as follows: Although it may be possible, it is excessively improbable, and for the following reasons. In the first place, the child's skin is well protected by smegma and the amniotic fluids; in the second place, there is very seldom any abrasion of the skin through which the so-called virus could gain an entrance to the absorbents, and this for infection is necessary; and lastly, the contact with the lesions of the mother is too short to admit of contagion being positive. In the venereal service at Charity Hospital, many women who are the bearers of chancroids are delivered while these are at their most acute stage, and yet I do not remember to have seen a single case of infantile infection from this cause. One case I particularly call to mind, where the woman's vulva was covered with ulcerating chancroids, the labor was a tedious one, necessitating the use of forceps, and yet the child showed no symptoms of chancroid during its residence in the hospital of several weeks' duration. Here was an instance where the conditions would have been favorable to inoculation, because the child's skin would be most likely to suffer from abrasions during delivery, and yet, as I have said, the child escaped contagion.

The advice to suppress as soon as possible local contagious lesions is well enough as regards the chancroid, but as regards the mucous patches

it is of no special value, because, as has already been stated, the child is not liable to inoculation. If cauterization has to be performed, it is better that this should be done with some destructive agency, such as fuming nitric acid, than with the nitrate of silver, inasmuch as this latter is not a caustic in the true sense of the term. Varnishing the surface of the ulcer may lessen the dangers of inoculation.

Of course all measures which tend to hasten delivery when it is once begun are proper, inasmuch as it prevents prolonged contact with the diseased genitals of the mother. But even here, I believe the risk of infection is very slight.

Of vastly more importance is it to take care that the diseased child shall not convey syphilis to healthy persons with whom it may be brought in contact. Of all persons the nurse is the one most likely to be the sufferer, inasmuch as the infant's relations with her are of the most intimate character. In this country the medical man is not so frequently consulted upon such matters as in foreign countries, because the custom of putting children out to nurse is not so common here as there. But there are others, such as the relatives of the child, to whom proper representations should be made as to the danger which may be encountered in kissing and fondling the infants, endearments which young and especially unmarried aunts are so prone to lavish on their nephews or nieces. All cracks of the lips in either party should be a good reason for suspicion, and any which make their appearance should be carefully watched, in the child as being possible mucous patches, in the relatives or attendants as being a possible initial lesion. Cauterization is of no service, inasmuch as if the disease is conveyed, no amount of cauterization will do the least particle of good. The syphilis will inevitably make its appearance.

A woman who has given birth to children which show evidences of syphilis, although she herself may show nothing, should be carefully watched, because the chances of her having been infected are very great, and if any symptoms appear in her, of course the surgeon would at once place her under treatment. But in the cases where only vague pains occur, where the symptoms are such as would not directly point to syphilis, I believe it is wiser to wait for something more definite to supervene before instituting treatment, and I doubt the advisability of administering, as a test, the iodide of potassium. There is no danger of applying the child to the mother's breast, as it is not capable of infecting her, and provided the supply of milk be sufficient and of good quality, it is, under the circumstances, the best thing to do. It cannot too often be repeated that the reason for this immunity is probably due to the infection of the mother previous to the birth of the child. Whether it be by coitus, the most likely method, or by the "return shock," makes very little difference, the diathesis is there and has sooner or later to be overcome. This theory of the "return shock" (choc en retour) is to my mind improbable and illog-

ical. Direct experiment has shown that the inoculation of the semen of syphilitic men is not capable of producing infection, and I can see no good reason for believing that it is capable of infecting the ovum ; at any rate I have not heard from the believers in this singular theory any good reasons advanced for their belief, except that unless it is accepted there is no explanation to be given why apparently healthy women should sometimes give birth to syphilitic children, where the husband has had syphilis. The most likely, the most natural, and the most philosophical explanation is that they were diseased by their husbands, and this view gains strength when we consider the many cases where the diseased father has healthy children, provided the mother shows no signs of syphilis, and how seldom it is that syphilis exists in the child without it also appearing in the mother.

If the mother's milk should be insufficient for the support of the child, then it must be brought up artificially. I do not believe that any nurse should be subjected to the risk of infection with a horrible disease like syphilis merely to add to the chances of saving the life of a being which is throughout its life-time liable to ill-health, and probably to a premature death. Should it be deemed necessary to do so, then the nurse should be told frankly and fully all the dangers attending her duties to the child, concealing nothing from her as to the probable effects of contagion. She must take the responsibility with her eyes open.

Syphilization does not help the problem at all, at least as far as this process is understood at the present day. The matter which is often used for the purpose is the secretion of chancroids, as well as the secretions of other lesions. If the secretion be that from a chancroid, then a chancroid is the result and no immunity is conferred upon the nurse, while if the matter be taken from a syphilitic lesion, we give the unfortunate nurse the very disease which we are trying to protect her from. The only desirable person to whom the child should be intrusted for its daily food, apart from its mother, of course, would be some woman who had already suffered from syphilis, and who should at the same time have an abundant supply of good milk. Such a happy combination of virtues is rarely met with.

The statement made by M. Diday on p. 214, based upon a remark made by Egan, that the attendants of the child, the dry nurses, sometimes contract the disease from it by simple contact, should not pass unchallenged. Simple contact, alone, is not sufficient to produce the disease, else no surgeon could dare to handle syphilitic lesions and escape infection. To have positive results ensue, there must be some abrasion, some solution of continuity, whereby the poison shall come in contact with the absorbents and thus be introduced into the circulation. But if the skin or mucous membranes be intact there is no risk, as has already been exemplified by our author himself, when speaking of the case where the nurse pro-

tected herself from infection by greasing the nipple whenever she nursed the child.

But it must also be borne in mind that it is not only by nursing the infant that syphilis can be conveyed. Kissing the child when mucous patches are present in the mouth or on the lips of the infant will also give rise to infection; indeed, the child may be considered as a constant source of danger to all about it, and the slightest neglect of precaution will render the person who is thus careless liable to pay the penalty of his or her carelessness.

Nor does the mischief end there. The person thus infected can become the centre of fresh infection to others, as is sufficiently attested by the records of epidemics of syphilis occurring in villages, following the advent of a syphilitic nursling, which find their place in the pages of foreign medical journals.—F. R. S.]

CHAPTER II.

CURATIVE TREATMENT.

The syphilitic affection having been recognized, the indication for a general specific treatment is clear, evident, and undisputed. We no longer discuss, for an instant, the aberrations in favor of the self-styled physiologism which saw and treated in venereal lesions nothing but simple *phlegmasiæ*. If the success of the antiphlogistic method applied to primary affections gave it some appearance of truth, the same could not hold good in congenital syphilis; for the symptoms which it presents are almost always the manifestations of a constitutional diathesis ; and the practitioner would have as many miscalculations as patients, if he persisted obstinately in excluding the true anti-syphilitic remedies from the treatment of them.

But the necessity of special treatment being admitted, the means of carrying it out most advantageously still suggest a number of questions of the greatest importance. We find ourselves here, it must be confessed, in a position which, unfortunately for humanity, is almost a disgrace to science. Face to face with an affection perfectly known, in possession of specifics the efficacy of which is undoubted, certain from experience of their efficacy in cases altogether analogous, the medical man has still too often the mortification of having only insufficient succor to offer. The same agents which effect a cure in the adult fail in the new-born child, and the Medical Society of Bordeaux has acted wisely in pointing out in its programme this unfortunate contradiction, as one of the most important *desiderata* to which it has thought proper to call the particular attention of candidates.

To clear up the problem, it is necessary to dissect it. Perhaps the unknown will more easily be eliminated by thus searching for it, by turns, in the various elements which must be taken into consideration for the formation of a complete plan of treatment. I shall therefore endeavor to determine successively—

At what period the anti-syphilitic treatment of new-born children must be commenced.

Whether the remedies must be administered directly, or through the medium of the milk which they suck.

By what channel—skin, stomach, or pulmonary mucous membrane—their absorption must be aimed at.

To which of the remedies recommended as anti-syphilitic—mercury, iodine, gold, sudorifics, etc.—absolute or relative preference is to be given, according to the different cases.

This last question having been settled, in what pharmaceutical form the remedy is to be employed.

What is to be, in accordance with the various conditions which may affect them, the daily dose, and the progression of it from the commencement to the end.

Within what limits the duration of a treatment of this kind is, *a priori*, to be fixed.

With what sanitary precautions the child must be surrounded, to favor the action of the treatment.

Lastly, when and how it is beneficial to promote its influence by that of a local treatment directed to a given symptom.

I.—*At what Period must the General Treatment of Infants be commenced?*

The child comes into the world with syphilis, either already apparent, or in the state of germ; or it ultimately contracts it. In the latter case, it remains subject to exactly the same rules as the adult. Let us assume that it has contracted a primary chancre. If this chancre is not indurated, as there are many chances that the disease will not become general,—as, moreover, mercury employed unnecessarily is never, especially at this age, without its disadvantages, we must wait and defer the administration of it until the moment at which constitutional symptoms begin to appear. If, on the contrary, the chancre is indurated, the employment of mercurial preparations must be commenced immediately. Nothing should exempt the child[1] from it, and the necessity for it once recognized, it is preferable to begin it in good time. The same course is to be pursued if the secondary affection (of which no one denies *the possibility*) have been acquired by direct contagion, and have commenced in the child in the form of a constitutional lesion, especially of mucous patches.

As regards inherited syphilis, analogy is wanting, and the course to be pursued cannot be cleared up by any precedent. Must we, when a child has been conceived under conditions which *expose* it to syphilis, and of which we are aware, subject it, though born without any visible symptom, *hic et nunc*, to specific treatment? This is a great question, upon which I have already touched (see p. 201), and which I do not see even alluded to

[1] I am here speaking of children only, reserving, as undecided in my opinion, the question whether it is better to give mercury immediately to an adult as soon as an indurated chancre is observed, or to defer the administration of it until constitutional symptoms (syphilo-derma, mucous tubercles) have appeared.

anywhere, the difficulties of which are, in fact, at least equal to its importance.

One fact proves, however, that such treatment does *exercise a real influence*, viz., the evidently favorable action of remedies administered to the mother during pregnancy. The medication is thus addressed to the child *at the moment when it is already under the stroke of the diathesis, and threatened with syphilitic symptoms, although these have not yet broken out.* But it prevents the appearance of these symptoms, as is clearly shown by the numerous cases in which we see women, who had previously borne a succession of syphilitic children, enabled to bring forth healthy ones, by a course of mercury given during pregnancy. Why, then, should this remedy not have the same virtue when it is given to the child, after birth it is true, but in a phase of the disease perfectly identical, as it appears to me, with that to which I have just alluded?

On the other hand, would the employment of remedies in such a case be attended with any danger? I think not. In the first place, being given only as a precaution, they would never be given except with moderation. Secondly, since these lesions generally manifest themselves before the end of the first or second month, it would never be necessary to prolong much beyond that term the anticipative treatment. Lastly, the continuation of it not being a necessity, its use would be abandoned as soon as it produced any bad result. We should thus avoid the too frequent inconvenience of this kind of treatment, adopted inconsiderately in adults for simple primary chancres; cases in which we see mercury affects the gums and digestive mucous membrane in a manner which renders the resumption of it almost impossible when the after-appearance of constitutional syphilis furnishes a positive indication for its administration.

But if the dangers of this course appear to me to be null, its advantages are, on the contrary, in my opinion, most striking. If it has not been entirely subdued, is it then nothing to have been able to disarm a diathesis over which we so rarely triumph when we await, before combating it, the period which it has itself chosen and prepared for its outbreak? Mercury, it is true, does not with certainty prevent the symptoms from reappearing ultimately. But, at least (this is the remark of Ricord), it defers the period of their appearance. This is a slight service to the adult, but a valuable, an immense gain when it applies to so frail an existence as that of a being in whom the vital resistance, almost null at birth, is still so feeble that a few weeks' advance, gained or lost, of the invasion of syphilis, is almost a question of life and death for it! Moreover, by commencing the treatment before the outbreak of any symptom, we can extend the total duration of it over a more considerable period of time, and regulate the doses, and consequently the susceptibility of the little patient, more than is sometimes done when the assistance has been deferred until the moment at which the danger breaks out in all its force.

Do I propose, on that account, to mercurialize without distinction and without exception all the children who, from the antecedents of their parents, may more or less be suspected of containing the germs of syphilis? Doubtless not, and the more so because, as I have already said, we frequently see children come into the world and continue perfectly intact, although their parents were manifestly syphilitic. It becomes absolutely necessary here, therefore, to make distinctions. Thus, if I might pretend to lay down rules in reference to a subject so new as this, I should prescribe treatment immediately after birth—

For children born of parents having, or having had, *both of them* syphilis at the time of conception;

For those whose father or mother was, at the time of conception, under the influence of a syphilitic diathesis, manifested by constitutional symptoms, recent and not yet treated specifically;

For those who, begotten apart from these conditions, but nevertheless by parents with syphilitic antecedents, are born *before the full time*, or at the full time, but with the *senile aspect* pointed out by writers as the certain stamp of specific poisoning.

I should, on the contrary, exempt from this immediate treatment—

Children *one only* of whose parents had had syphilitic affections *some time previously*, especially if they had undergone specific treatment;

Those whose mothers, whatever had been the source of their disease, had undergone during their pregnancies a *full mercurial treatment, commenced before the sixth month.*

Those who, notwithstanding suspicious antecedents in their parents, should present *the appearance of robust health and of a vigorous constitution.*

It must be thoroughly understood that, in the rare cases in which characteristic venereal symptoms exist at birth, the child must at once be subjected to anti-syphilitic treatment, the detailed instructions for which will be given hereafter.

If this idea of treating the disease before the appearance of its symptoms may find some opponents, it might at least be expected that there could be no difference of opinion as to the necessity of commencing the administration of remedies so soon as these symptoms declare themselves. Far from this. To some writers the dangers of mercury seem to me such as to more than counterbalance its utility, even in cases where the indication for it appears to me most imperative. De Blegny[1] already hinted at these apprehensions when he remarked "that the child at the breast is infinitely less capable of *bearing the effect of remedies* than at a more advanced age." Guyon de la Nauche says, that "the cure of syphilitic children would be more certain if we could defer the treatment of them until they were four or five years old."[2] Carrying this view still further, Gar-

[1] L'Art de guérir les Mal. vénér., p. 270.

[2] Le cours de médec. théor. et prat., t. v., l. vi., p. 28.

danne converts it into a formal precept: "Except in a very urgent case," he says, "it is more prudent to defer the administration of the remedy (bichloride of mercury) until the twelfth month."[1] A little further on he states very distinctly that only children *who have passed the twelfth month* are admitted to his dispensary for the exhibition of the remedy (op. cit., p. 165). And when we consider that this same Gardanne was invested by the authorities[2] "with the duty of dispensing to the children of the poor the remedies necessary for curing them of the venereal disease," we cannot help experiencing a feeling of compassion for the many victims which this unjustifiable temporizing, unfortunately raised to the rank of a general system, must have numbered.

In my opinion, it is the exact converse of this course which constitutes the veritable rule to be observed, without exception and in every case. The debility, the chloro-anæmia, the leanness, the scrofulous appearance, the tabes, which, with some medical men, are so many obstacles to the employment of specific remedies, depend so often upon lesions caused by syphilis that they authorize and dictate, in my opinion, the immediate use of those remedies, instead of contra-indicating it. The recent researches of Ricord, P. Dubois, Depaul, Gubler, etc., by pointing out the frequency of visceral syphilitic lesions, and showing the causal relation which connects them with the various functional disorders of the new-born child, have singularly contributed to prove that anti-venereal remedies may much sooner obviate than aggravate, as was formerly believed, the consequences of these morbid conditions. As for me, on taking into account the urgent danger with which syphilis threatens early age, and the powerful succor which remedies of this kind offer, I should be almost tempted, despite all the reserve which the practitioner ought to exercise in such circumstances, to exclaim: No; there never can exist, in such a case, any contra-indication to the immediate administration of specific agents!

[The question of the advisability of commencing treatment in cases of inherited syphilis can admit of but one answer, and that in the affirmative. All idea of successfully combating the disease by antiphlogistic remedies must be abandoned, unless the desire be to deprive the child of all chances of recovery. Prompt and energetic action must be the order of the day, else, while the surgeon is delaying until the child shall be strong enough to bear the treatment, the patient will relieve the surgeon of all further need of interference by quietly dying on his hands.

But in regard to what M. Diday says about the treatment of primary chancres which are indurated and those which are not, some criticism may be made. In those cases where the chancre is not indurated, it may or may not be syphilis, for it is now recognized as a fact that the initial lesion

[1] Recherches prat. sur les différentes manières de traiter les Mal. vénér., p. 139.

[2] See the decree of the Lieutenant of Police, May, 1790.

of syphilis (chancre) is not necessarily indurated, yet it remains syphilis all the same, and will be as surely followed by subsequent manifestations of the disease as though it had shown the most characteristic induration possible. If, then, it be a syphilitic lesion that the surgeon has to deal with, should the treatment be commenced at once? I say not, for the reason that the immediate result of such a course would be to retard the period at which the subsequent symptoms should make their appearance, and leave the surgeon in a state of doubt as to when to safely stop treatment, and it also deprives him of all chance of forming any prognosis which can be founded on reason. Besides, cases of acquired syphilis—and these are the cases which are now under consideration—are not, comparatively speaking, dangerous, nor are the child's chances of ultimate recovery prejudiced by delay in commencing treatment until the advent of the syphilides of the skin or mucous membranes.

On the other hand, if by the chancre which is not indurated M. Diday means the chancroid, then all necessity for the administration of mercury is at an end, for these lesions are never followed by subsequent manifestations which can be referred to syphilis; hence not only should the administration of mercury be deferred, but it should never be given. If not absolutely injurious it is unnecessary, and such being the case it should not be given.

But where the child is born with the hereditary taint, then the conditions are different and other measures are to be adopted, but even here discrimination must be exercised. All syphilitic-born infants do not need immediate mercurial treatment. How, then, should this discrimination be exercised; under what circumstances shall treatment be commenced, and under what circumstances should it be delayed?

In the first place, it must be remembered that all syphilitic children are not born with the manifest symptoms of the disease; with the classical features of syphilis as laid down in the books. On the contrary, a large proportion of such infants are born apparently healthy, with well-nourished bodies and a fairly rosy color. It is only after birth, often several months after, that the little patient shows signs of its inherited disease, and even then perhaps lightly. Should such a child be treated immediately after birth, although positive evidence of syphilis can be adduced in the parents? I believe not. Suppose immediate treatment be instituted, and no symptoms appear during its continuance of several months, how long shall the surgeon continue it? For six or twelve or eighteen months, and when it is finally discontinued what assurances has the surgeon that the treatment has been thorough, and that subsequent symptoms will not supervene later on? This kind of treatment savors to me altogether of a blind routine, and not of scientific precision. Under such circumstances it seems to me preferable to await the appearance of symptoms and then treat those, omitting the use of medicines on their disappearance, to re-

sume it if other signs of the disease manifest themselves, in the meantime keeping up the patient's general health by tonics. In this manner some idea can be obtained of the probable course of the disease, and a prognosis of some degree of value obtained.

But suppose, on the contrary, that the child comes into the world with clearly marked manifestations of syphilis, what shall be done? Treat it at once and energetically, give it every chance to retain its wretched life. Fortunately for mankind, a very large proportion of such children die in spite of the most careful and methodical treatment, but some few survive the ordeal and live. The treatment should be thoroughly carried out until all manifestations of the disease have disappeared and the child has been restored to a good degree of health, and then suspend it and await developments, when the treatment may be renewed, if requisite. But I do protest against a routine method which would treat children who themselves are free from any manifestations of syphilis, merely because the parents had syphilis. I repeat, do not treat such patients unless there be something to treat.—F. R. S.]

II.—*Must Infants be treated Directly, or through the Medium of the Milk?*

The indirect treatment, that is to say, administered to the nurse, and thus reaching the child mediately through the milk, was formerly much in vogue. More mild, more gradually administered, dissolved more completely in a vehicle adapted by nature herself to the digestive powers of the infant, and entering its stomach in very divided doses only, it seemed to present the best means of controlling the extreme susceptibility so freely attributed to new-born children, and which, in the matter of anti-syphilitic treatment, has so often led to *controlling* it much more than the interest of their cure requires. The indirect mode of treatment was, then, long esteemed. Colombier, Doublet, Faguer, attached to the special hospital of Vaugirard, do not doubt that the nurse's milk becomes impregnated with molecules of mercury, and is capable of curing the child which she suckles. Bertin strongly advocates this opinion. "The milk of the nurse," he says, "pretty often suffices to cure the child intrusted to her;"[1] and I have looked in vain in his book for anything which could have authorized Cullerier[2] to write that his confidence in this mode of treatment had ultimately been shaken. Bertin quotes, on the contrary, a decisive observation, in which a child covered with pustules on the thighs and legs, reduced to a cachectic condition, and too weak to bear the direct administration of remedies; resumed the appearance of good health by the aid of the influence of the mercurialized milk of its mother.[3] Bouchut does not advise any other treatment than that thus administered through

[1] Op. cit., p. 184. [2] Bullet. de thérap., 1852, p. 441. [3] Op. cit., p. 78.

the medium of the nurse;[1] and I have already quoted from Bassereau striking instances of its efficacy. I will not swell this list with the more or less formal evidence of Garnier, Astruc, Levret, Fabre, Burton, Rosen, etc., in favor of the mediate employment of mercury.

In his very remarkable treatise, Cullerier, resuscitating against this treatment an objection already antiquated, has sought to prove chemically that the milk of a nurse who is taking mercury never contains enough to affect the cure of her nursling. Reveil and Personne proceeded, at his request, to minute analyses. The former only once detected mercury in the milk of a goat to which this metal had been given in very large quantities, so as to occasion very serious disturbances in it. He has never detected it in the milk of women who had taken the remedy in medicinal doses. But Personne, on his part, having adopted a different method, verified the presence of mercury in the milk of women who had taken three-fourths of a grain of the proto-iodide daily for two months. It is true, adds Cullerier, that he detected infinitesimal quantities only. Our author infers therefrom the inefficacy of the indirect treatment.

After having read the account of these experiments, we ask ourselves whether they are not more opposed than favorable to the theory in support of which Cullerier invokes them. This woman, let it be observed, took the mercury in doses two or three times smaller than those prescribed in an ordinary anti-syphilitic treatment; and yet reagents showed that her milk contained some of it. The quantity detected was extremely small, says Cullerier; and this I grant. But can it then be supposed that the analysis revealed all? Is it certain that the other means would not have showed the presence of a larger quantity of the metal? The assumption is the more admissible, as I have seen Reveil fail in an analogous investigation, and infer the absence of mercury solely because he had carried out the experiment in a different manner. If the difference of process explains how, of two very skilful men, the one found while the other sought in vain for the same body in the same fluid, by what right should it be forbidden me to hope that a more perfect system of analysis may to-morrow demonstrate in it a more considerable quantity?

But this is not all. I am willing to admit that chemistry has, for the present, told us all it can tell. Must this *infinitesimal* quantity of mercury be estimated, in reference to its curative power, by that of the salts which we dissolve in our laboratories? An extremely small quantity of sulphur or of alkali contained in the waters of Barèges or Vichy cures, in twenty-five or thirty days, affections which had previously resisted the largest *officinal* doses of sulphuret of potassium or bicarbonate of soda. Has nature denied herself the same privilege in the combinations which she effects in the living organism? A vulgar adage tells us that man lives by

[1] Op. cit., p. 866.

what he digests, not by what he eats. In the same way, it is the remedy absorbed, not the remedy ingested, which effects the cure. And if a molecule of mercury reduced by the milky secretion to the state of combination most favorable to its curative action; deposited in the vehicle most conformable to the special conditions presented by the child; and reaching the stomach continually, arrives there in a form and at times in which its passage into the absorbent system is insured; if, moreover, this molecule (as facts prove) suffices to cure it—in the name of what science can its effects be compared to those of the portion of a salt which we force it, twice a day, to swallow repugnantly, without even knowing whether it will not immediately be rejected intact with the stools?

If experience does not prove that the indirect treatment is the best, it shows, at the very least, that it may sometimes suffice; and theory, as we have just seen, does not refute the evidence of observation. Whether as an indispensable resource, when the child would not bear any direct treatment, or as a useful auxiliary in cases where an urgent danger demands the multiplication of our remedies, it must be retained. Without ever taking it in its strict sense, the practitioner will not forget, in reference to syphilis, the precept of Hippocrates: *Lactantium cura tota in medicatione nutricum.* The advantage of causing the remedy destined for the child to pass through the system of the nurse is still more evident when it is iodide of potassium, and not mercury, which is to be administered. This remedy may, in fact, be taken with impunity in such large doses, and passes undecomposed into all the secretions with such facility, that the child undoubtedly receives in this way a quantity fully adequate to its cure. I have already quoted from Bassereau observations which thoroughly confirm this view.

An ass or a goat rubbed with mercurial ointment after shaving the parts, may, in default of a nurse, furnish medicinal milk. The use of it has been recommended by many of the older writers on syphilis; and, if Swediaur is to be believed, "in one of the reigning families of Europe no child survived a certain age until this treatment was adopted."[1] At present, such measures are almost entirely abandoned. Perhaps wrongly so. Very possibly a few cups of the milk of a mercurialized animal would be at once a good food and a good remedy for a syphilitic child when beginning to associate with the milk of its mother some foreign aliment.

The indirect treatment has always to guard against an obstacle which robs it of its power, and even mingles some dangers with its action, often without its being suspected. In general, it is when the nurse is syphilitic that remedies are administered to her, that they may serve equally for her and for her nursling. This was the course pursued at the hospital of Vaugirard; this the one adopted with mothers who, having been the

[1] Traité complet des Mal. vénér. ou syphil., t. ii., p. 133.

source of the infection of their children, wish, by giving them the breast, to transmit to them, after the disease, its remedy. This practice, which is believed to be wise and prudent, is so essentially in that it allows of suckling the child without exposing a healthy nurse. But, regarding exclusively the interests of the infant, can it be a matter of indifference whether it is nursed with the milk of a healthy woman, or of one who is syphilitic? It could not, I grant, contract syphilis, having already done so. But will not such a diathesis, essentially debilitating, whether in itself or from the remedies which it necessitates—a diathesis so often combined with chloro-anæmia—influence the product of the mammary secretion? And when we see medical men and parents so carefully watching the change which the least indisposition, the slightest emotion of the nurse occasions in her milk, must we not be astonished to hear them tolerate and even advise suckling by a woman the subject of a *dyscrasis* so general and so persistent as that of syphilis? The observation of which I am about to give the *résumé* shows, among a thousand others, the effect of such alimentation upon the health of the child.

A healthy lady of nineteen, says Capdevila, was delivered in April, 1851, of a robust child, but which fissures of the breast prevented her from suckling. It was intrusted to a healthy and robust nurse, who appeared to present the most favorable conditions. Nevertheless, the child began to fall off considerably, had frequent indigestion and diarrhœa, with paleness of the skin and mucous membranes, swelling of the joints, enlargement of the abdomen, tardy ossification of the bones of the skull, late dentition, etc. At the end of thirteen months it was observed that the nurse presented a papular syphilitic eruption, accompanied by characteristic pains in the limbs. The child was taken from her, and, being better nourished, ultimately recovered its former state of health.[1]

I have selected this case purposely on account of the slight influence which syphilis had produced upon the health of the nurse at the time when she took the child. While no external sign induced a suspicion that she was diseased, she was capable, at a very little advanced period or degree of constitutional syphilis, to do a serious injury to her foster-child by the bad quality which the diathesis, although so feebly marked, had communicated to her milk.

Here is another instance of the same kind, the authenticity of which I can attest *de visu*:

A lawyer, free, as well as his wife, from any syphilitic antecedents, had first a child which was and has since remained a perfect model of health and strength. A year afterward they had a child which they gave to another nurse, who presented at the time every appearance of a robust and intact constitution. The child, which at first throve admirably, began to decline about the seventh month. The nurse presented at the same time

[1] La Cronica de los hospitales de Madrid, December, 1853, p. 391.

some spots upon the face, to which the eye of the father was anxiously directed. Being then examined by Dr. Tessier and another medical man, the nurse was found to be the subject of a well-marked papular syphilitic eruption; and on questioning her, it was ascertained that she had had, some months previously, some rather obscure symptoms, but among the number of which the existence of a bubo was admitted. The child was taken from her immediately. It had not and has not since had any symptom of syphilis, but for two years and a half it remained feeble, pale, with flabby muscles, an evidently chlorotic tint, and tardiness of the locomotive function, a difference rendered especially manifest by the vigor and vivacity of its elder brother. This condition (alarming from its duration) not promising to terminate, although the nurse was changed, Dr. Taupin fortunately decided upon administering preparations of iron, which produced in some months a most remarkably satisfactory change.

The conclusions deducible from these cases do not tend to make us condemn the indirect treatment; they show only that it must be judged less by what it effects than by what it might effect. With a healthy nurse, mercurialized for the sole purpose of treating the child, the aggregate of the elements favorable to this mode of treatment would be realized. But it is not given to all to meet with, or to be able to create for their children, such medico-sanitary conditions.

When the mother is syphilitic and unable to suckle her child—when there is no nurse at hand who requires or consents to take mercury, then direct treatment becomes indispensable. But this is very far from being the sole indication for it; and, in my opinion, as in that of the most recent writers on syphilis, it is by no means to be regarded as a last resource, or as a make-shift. Quite the contrary; it is to meet acute symptoms, it is in *galloping* syphilis, that the employment of it becomes an urgent necessity, a most imperative duty. A great number of children to whom indirect treatment will ultimately render valuable services—the first violence of the disease having been subdued by the direct use of specifics—would infallibly succumb if we endeavored to treat them exclusively through the medium of the medicated milk of the nurse. In confining ourselves to it alone under circumstances (less rare in infants than is generally believed) in which prompt aid is required on pain of death, we must bear in mind the essentially slow action of the indirect treatment, that we may avoid compromising both the remedy and the patient.

A case rather embarrassing to solve may present itself: the syphilitic mother is able to suckle, but the child, on its part, bears well the direct mode of treatment. Must we, to furnish this treatment with the complement promised by the mercurialized milk of the mother, pass over the disadvantages which result from the bad quality of that milk? Must we, in other words, renounce giving the child a healthy strange nurse, with a good supply of milk, that it may profit by the mercury it might imbibe from the breast of its mother? In spite of my sympathies for the indirect

treatment, I am far from leaning toward this solution. When the infant bears with impunity the action of remedies directly administered to itself, treatment has fulfilled all the requirements which its condition presents, and nothing more remains to be done but to make hygiene play its no less indispensable part. But the first condition for this end is the choice of a nutritious and restorative milk; and a nurse free from syphilis, if she be willing to perform her duties conscientiously, will always do so much better than her whose organism has been debilitated by the syphilitic diathesis, and all whose functions have been perverted in a more or less marked degree. To conclude: treat the child directly in such a case, and procure for it as healthy a nurse as possible.

I have annexed the two following cases as establishing, by a clinical counter-proof—undertaken, so to speak, expressly—the superiority of the direct treatment:

Mrs. X——, infected on the very day of her marriage, and becoming pregnant immediately, has, at the end of two months, copper-colored spots, mucous patches, etc. She is treated very imperfectly, and is delivered at the full time of a healthy little girl, who, at the end of three weeks, presents flat tubercles about the anus and vulva. Her mother, who suckled her, recommenced a mercurial treatment. Nothing is done, in the case of the child, beyond observing perfect cleanliness. In a month all the symptoms disappear.

At six months, fresh tubercles appear in the child. The mother, although exempt from venereal symptoms, again takes mercury. At the end of a month the child again recovers.

At one year flat tubercles reappear about the anus and vulva of the little girl, and, in addition, a pustular eruption on the face. Cullerier, being then consulted, advises direct treatment; but the parents objecting to it, he causes the child to be suckled by a nurse to whom Van Swieten's drops are administered for three months. The child recovers.

At two years a roseolous eruption presents itself, accompanied by mucous patches at almost all the orifices, and by pustules of ecthyma on various parts of the body. This time there is no opposition to the direct treatment, which, moreover, at that age, was the only possible one. For three months Cullerier administered, at first one-sixteenth, then one-fourth, of a grain of bichloride of mercury, and a mercurial bath every five days. This child, which is now ten years old, is very healthy, and has not had any relapse since that time.[1]

In this case, the indirect treatment showed itself incapable of effecting a radical cure; but, at least, it had produced the momentary disappearance of the constitutional symptoms. In that about to be narrated its inefficacy is still more evident; for only a progressive aggravation of the disease was observed during its action.

A woman, married in November, 1832, had, at the end of seven weeks, a chancre in the vulva; she took pills. At the end of two months an erup-

[1] Bullet. génér. de Therap., 1852, p. 455.

tion appeared on the whole of her body, and returned in the month of June, 1833. She again employed mercurial remedies.

In 1835 she became pregnant, and miscarried at the eleventh week.

On March 20, 1836, she was delivered of an apparently healthy female child, which she suckled. But at nine weeks the child presented copper-colored spots on the face, neck, and trunk, and had the disease at the angles of the lips. Colles treated the mother with mercurial pills. The little girl sucked freely, and had no remedy administered to her.

At three months the child had papulæ on the vulva and buttocks; its health began to decline; it cried incessantly. A surgeon merely added frictions to the treatment followed by the mother. Three months later this child was brought to the hospital very emaciated, feeble, pale, and, as the author says, in a deplorable, almost desperate condition. All the symptoms mentioned above persisted, and several of the pustules became ulcerated. The mother had no symptom of syphilis.

On September 3d, a mercurial syrup was given to the mother and the child; the ulcers of the latter were dressed with black wash. On the 8th the treatment of the mother was suspended, because it purged her, and was not resumed. The treatment of the infant was continued; an amelioration soon took place; it cried less, its voice became changed in character, and its strength returned. In short, the ulcers healed by degrees, and thanks to the continuation of the same treatment, a complete cure was effected.[1]

[The indirect treatment of hereditary syphilis by administration of mercury to the nurse, with the view of mercurializing the milk, is one which is seldom resorted to at the present day, because experience has shown that the direct methods produce more positive results, and are capable of controlling the disease better than the indirect method. Still it is a subject of extreme interest, and I trust I shall be excused if I dwell for a short time upon a consideration of its value in the treatment of hereditary syphilis.

Experiments have shown that the milk, in cases where the nurse, be she animal or woman, has been mercurialized, contains usually no traces of mercury, and in those rare cases where it has been said to have been found, the amount has been very minute. Still cases have been quoted, principally from the older authors, where this method has resulted in the disappearance of symptoms in the child. In accepting these cases of reputed improvement, it should be remembered that in syphilitic children, symptoms have the same tendency to disappear without treatment that they have in adults, especially in those cases where the poisoning of the child has not been profound; where the child, so to speak, has not been poisoned to death. Hence these cases of improvement may have resulted, not from the administration of mercury, which was present in only minute quantities in the milk, but from the efforts of nature toward recovery. M. Diday is evidently a believer in the efficacy of the indirect method of

[1] Colles. On the Venereal Disease, p. 227.

treatment, and yet the two cases which he gives on pages 230 and 231, do not prove convincing as to its efficacy to produce permanent results.

The first case shows the little child to have been born healthy, and to have shown no symptoms until she was three weeks old. The symptoms disappear at the end of a month's treatment of the mother by mercury, although there is no evidence to show that any mercury found its way to the child through the milk. The child remains free from symptoms until it is six months old, when symptoms similar to those which occurred shortly after birth reappear. The mother resumes treatment, which we are left to infer was discontinued when the manifestations in the child were cured, and again the symptoms vanish. At the end of another six months they reappear with the addition of a pustular syphilide, showing that the treatment had not been very efficacious in checking the syphilis. A nurse this time is the subject for mercurialization, and again the child gets well; but in this instance we are no wiser than in the mother's, as to whether the child got any mercury in the milk. At the end of another year the child has fresh symptoms betokening an advance in the disease, but this time direct treatment is instituted. And what is the result? The child recovers and from the age of two to that of ten years shows no sign of relapse. In other words, the indirect treatment has no seeming effect in checking the disease, and it is not until a proper method of treatment is instituted, to wit, by the direct method, that it is freed from its disease for any length of time, and then it is for eight years instead of a few months.

The second case is still more marked, if possible. The child at the end of nine weeks shows evident symptoms of syphilis, and the indirect treatment through the mother is instituted. At twelve weeks the child is worse, but still the indirect treatment is continued. Yet no improvement takes place, the child at the end of another three months is carried to the hospital, "in a deplorable, almost desperate condition." Now for the first time direct treatment is instituted, while the treatment of the mother is suspended, and "a complete cure was effected."

These cases, which were used by our author for the purpose of supporting his belief in the efficacy of the indirect method of treatment, seem to me in reality to militate against its value. And let me ask, what is the sense of using a method the value of which at the best is very doubtful, when another far more efficient is at hand, one which we can count upon with far more certainty? I must confess I do not see the use of it myself, and in such serious cases as these under consideration, I do not appreciate the wisdom of selecting uncertain for positive modes of treatment.—F. R. S.]

III.—*By what Channel is the Absorption of Specific Remedies by Infants affected with Syphilis to be aimed at?*

This class of considerations, accessory in the adult, assumes, in the instance of infantile syphilis, an extreme importance. Few writers, however, have hitherto accorded this to it; neither could it be otherwise, since it results chiefly from the discoveries recently made concerning the nature and frequency of the visceral lesions which accompany congenital syphilis.

Writers formerly confined themselves, in reference to the special point at issue, to stating vaguely that, when the digestive organs are too susceptible, the remedies must be administered in the form of baths, frictions, fumigations, etc. But these latter directions being, consequently, only given for subjects in whom the exhaustion of the chief functions prevented the use of the remedies internally, they were scarcely ever seen to succeed. Neither was more confidence placed in their effect than care taken in the execution of them. It was as a last resource, and to satisfy his conscience in some degree, that the practitioner dictated them. It appears to me that the indication for them must, at the present time, appear under a totally new aspect.

Without discussing here the question whether the liver forms the bile, or whether it merely separates it from the blood, there can be no doubt that it plays an essential part in digestion; and no one, so far as I know, would attempt to maintain that the elaboration of the materials deposited in the digestive canal is as complete in the absence as with the concurrence of the normal biliary secretion.

Further, the passage and filtration through the liver of the substances conveyed from the intestines by the portal vein, is a condition essential to their regular digestion.

But when the tissues of the liver undergo the induration described by Gubler, the most ordinary consequences of this change are, as we have seen, *the suspension of the normal biliary secretion*, and *the obliteration of the vessels* of its parenchyma.

Digestion, therefore—and the inference will doubtless not appear forced—must undergo, from the fact of this lesion, an alteration, the effects of which are, moreover, sufficiently revealed by the unusually rapid falling off observed in subjects affected with it.

But we should overlook a notable portion of the dangers of this disturbance if we limited it to the digestion of the food. Remedies encounter a similar obstacle, and without becoming absolutely inefficacious, they must thus lose a considerable part of their power. The child therefore finds itself menaced in this case, both by the impediments to nutrition and by those which oppose themselves to the absorption of the indispensable remedies.

If we take into consideration the frequency of this change, the difficulty of diagnosing its existence at an early period, and the entirely analogous effect which must be produced by the engorgement, common enough also in these cases, of the mesenteric glands, we shall agree, I think, in recognizing the utility of the new data, of which I content myself here with affording a glimpse. If they are correct, an extreme interest must be attached to lesions of the liver; and it becomes urgently necessary to multiply our investigations to determine the especial etiological conditions which preside over their development, and to improve our means of detecting these lesions at an early period, immediately after birth, if possible.

And since, in the present state of our knowledge, we have no means either of foreseeing this change, or even of recognizing it until it makes itself known by its most serious effects, we must always assume it as soon as it is possible, or at least, be ready to act as if it existed. And if I saw well-marked constitutional symptoms resist the administration of specifics by the mouth, warned by the preceding notions, I should infer the possibility of induration of the liver; and this assumption would suffice to modify my plan of treatment. Consequently, I should address myself with confidence and energy to cutaneous absorption, frequently the only channel left open to me, the lesion of the liver being pretty generally complicated with specific inflammation of the lungs.

These considerations not only furnish more frequent indications than formerly existed for external treatment, but they give grounds for these indications entirely different from those hitherto recognized. It is no longer because internal treatment might be *ill borne by the stomach* that remedies will be administered by the skin; it is solely because it would there meet with mechanical and vital obstacles to its effect. It is no longer condemned for its dangers, but for its insufficiency. Neither do I propose to abandon it, but merely to furnish it with an auxiliary. Even if the lesion of the liver should be evident, the administration of anti-syphilitics by the mouth must not be discontinued; for if even the smallest portion of its parenchyma were intact, it would be, with a passage open to the remedy, a further chance of cure. But, while insisting upon the use of agents of this kind, it is important to multiply in every form those of the external treatment. We must employ, then, simultaneously, and more than once a day, frictions, baths, lotions, plasters kept on constantly, and fumigations, which also sometimes prove efficacious.

A special indication for treatment by cutaneous absorption also exists, for the child as well as the adult, whenever the gastro-intestinal mucous membrane is too susceptible to bear the irritating contact of preparations of mercury or iodine. There is even need of greater vigilance here to forestall the inflammation before it breaks out, and to meet it on its earliest indication by the suspension of the internal treatment. In fact, a good and regular nutrition, an imperative requirement at all ages, is especially

so for infants, and still more so for those affected with syphilis. If there be a means of rescuing such from the perils of this debilitating dyscrasis, it is assuredly by submitting them to a thoroughly reparative alimentation. Doublet had well recognized this when, after having said that all new-born children fed with goats' milk, rice-water, wine, etc., sank, he adds:[1] "If some have been rescued from danger, it is because they have been intrusted to nurses." There is no special writer who has not expressly recommended this course; and all treatment attempted in the absence of this indispensable auxiliary would, *à priori*, be condemned as powerless. If, then, the employment of remedies internally irritates the stomach and occasions diarrhœa, a tympanitic condition of the abdomen, cries, and an expression of suffering more marked during the first hours which follow the ingestion of them—if vomiting supervenes under the same circumstances, and especially if emaciation be observed, do not wait for more serious derangements before changing your plan of treatment. The substitution of topical remedies for internal ones then becomes imperative, and cannot be adopted too soon. There would always be time to recur to the latter, or at least to combine them in very small doses with the employment of external applications, if these, although administered *largâ manu*, produced local lesions or proved insufficient. The delicacy of the integument at this age does not contra-indicate this mode of treatment. Colles[2] says that he never saw mercurial inunction produce erythema in new-born children, etc. Cullerier is of the same opinion.

Is it, moreover, necessary to say that, when they are tolerated, medicines given internally deserve an absolute preference? They have justified it, especially in this case, by so many services, that they ought always to constitute the general method—that by which we must commence, and abandon only when its ill effects, learnt by experience, manifestly predominate over its advantages.

Many of the older writers, however, recommend inunction only. Petit-Radel and Lamauve prefer it to the use of remedies internally. But the most fervent advocate for them of all is no doubt Brodie. This illustrious surgeon, who, it is true, has devised a special method for procuring the absorption of mercury by the skin, writes: "Very few of the children who have taken mercury internally have recovered; but I have not seen a single case in which the method I have just pointed out has failed."[3] I shall explain this method presently. Cullerier, who has the most recently and the most practically studied this subject, also accords a decided though not exclusive preference to endermic treatment.

[The best way of administering mercury to the new-born child affected with hereditary syphilis is one which demands the most attentive care on

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[1] Mémoire sur les Sympt. et le Trait. de la Mal. vénér., p. 61.

[2] Op. cit., p. 281. [3] Lectures Illustrative of Various Subjects, p. 245.

the part of the physician, for upon its proper exercise the success of the treatment will largely depend. Whether it shall be administered by the mouth or by the skin are the points to be considered.

As a general rule, it is better to consider the stomach and intestines as meant for the reception and digestion of food, and to reserve it for that purpose as far as it can be done; but if it be found requisite to use it as a receptacle for medicine, let the drug be administered in such a way as to produce the least possible disturbance; in fact, its presence should not be appreciated any more than the food which the child takes. The local administration, whenever practicable, is the method which presents itself as the best, and this may be done as inunction, bath, washes, plasters, or fumigation. This latter, however, is not a very desirable manner of giving the necessary remedies.

The preferable mode of treatment is by the inunction of an ointment containing mercury, which should be thoroughly applied to the child's body. A convenient and perfect way of attaining this end is to make a jacket without arms for the child, which shall reach from the axillæ to the pubes, and made to lace up in front at the same time that it shall fit the body snugly. A drachm of mercurial ointment rubbed up with equal parts of vaseline should be divided into two equal parts; one half is to be rubbed gently into the body from the axillæ to the pubes, while the other half is smeared evenly on the inner surface of the jacket. This latter the child is to wear continuously, day and night, as long as possible, and when it is worn out it should be replaced by another, but it should be remembered that the old jacket is preferable, as it is more thoroughly impregnated with the mercury. The object is to keep the mercury in contact continuously with the skin, while the heat of the infant's body and the movements of the child favor the steady absorption of the mineral. The ointment should be freshly applied every second or third day, according to circumstances, and the strength may be increased to the undiluted mercurial ointment, if it be found requisite. Syphilitic children bear mercury remarkably well, nor does the skin, as might be feared, *à priori*, become irritated or excoriated; and no one, after seeing the improvement which follows the proper use of mercury in this class of disease, would hesitate for a moment in using the drug from a fear that it would prove injurious.

The use of baths is not so efficacious as the inunction method. In the first place, it lacks the continuous absorption of the mineral which goes on when the mercury is applied to the skin, and in some cases it is attended with risk from the exhausted condition of the child. It is usually given by dissolving a solution of the bichloride of mercury in warm or hot water, and bathing the child in it for five to ten minutes. Practically, it is never used.

Lotions or washes applied to the body are open to the same objections

as are the baths, and are nearly entirely superseded by other methods of treatment. Fumigations are not unattended with danger, due to the inhalation of the irritating fumes of the mercury into the child's lungs, and inasmuch as they do not present any advantages over the frictions, their use has been abandoned.

Hypodermic injections of the mercurial salts are never used in the treatment of hereditary syphilis, as the proneness to the formation of abscesses by this method and the exhaustion which would ensue from their suppuration make it an undesirable form of treatment.

As may be readily surmised, I disagree with M. Diday in his opinion that "when they are tolerated, medicines given internally deserve an absolute preference." I do not hesitate to admit that they do good when they are tolerated, but I prefer the local method of treatment, because it is not so liable to produce gastric and intestinal disturbances, and because it keeps the stomach for its natural work, the ingestion and digestion of food.

The question of food is as important as is the one of medicine, perhaps more so, inasmuch as unless the infant be properly nourished, all medication, no matter how excellent it may be, will be useless; the child succumbs. Wherever possible the child should be given breast milk, and that of the best quality, and it should be fed regularly. Indeed, this point cannot be too strongly insisted upon.—F. R. S.]

IV.—*To which of the Remedies recommended as Antisyphilitic must Preference be given in the Treatment of Infants affected with Syphilis?*

The preparations of mercury and iodine are the only ones which can contend for the choice of the practitioner; not that the whole treatment is confined to knowing how to administer them, for hygiene furnishes valuable resources for seconding their curative action. I merely wish to state that, with respect to specific remedies, not one is to be compared to the two heroic agents which the healing art daily finds so useful against the syphilis of adults.

A priori, analogy would appear to indicate the iodide of potassium more particularly in two cases, viz., first, when the child is affected with symptoms more or less analogous to tertiary symptoms in the adult, and especially with visceral lesions; secondly, when the parent who has transmitted the disease to the child was, at the time of transmission, in the tertiary stage of the affection. But we have seen, in the second part of this work, within what limits similar conclusions are justified by experience, and how far it is legitimate to regard as tertiary the affection of a new-born child developed in the midst of such conditions.

But can treatment claim more certainty for its indications than diagnosis for its conclusions? Doubtless not, strictly speaking; since it is

precisely the preliminary division into secondary and tertiary phenomena which must suggest to the practitioner the choice to be made between the two antidotes. But, in fact, the strictness of rules may, with benefit to the patients, undergo more than one relaxation. Thus, without *à priori* prescribing preparations of iodine rather than of mercury in cases which present one of the two conditions just mentioned, I shall take it for granted that the administration of them would then be especially rational. I can, then, in such a case, try them first, and go on with them if good results soon show their suitableness. I can, further, under the same conditions, if mercurial preparations fail to check the progress of the lesions, have recourse to the iodide, the employment of which would then be doubly indicated. But, I repeat, this is the only trial which prudence authorizes us to make; and there is a great difference between these vague indications, this methodical feeling the way, and the clear and easy measures, the safe and bold employment of this salt, which practical knowledge of the syphilis of adults authorizes and dictates.

Some success has followed the employment of iodide of potassium in the conjunctures which I have just alluded to. Bassereau mentions the case of a child affected with suppurating subcutaneous tubercles, manifestly tertiary, contracted from its father, who had reached the same phase of the evolution of the disease. Notwithstanding the gravity of the symptoms, it recovered under the use of the iodide taken by the nurse. A most conclusive therapeutical counter-proof adds great value to this case. Four years later the same man, still under the influence of the diathesis, begot another child. The latter was equally affected with syphilitic tubercles. This time, the nurse having, at the end of a few days, refused to take the iodide, the child was subjected to mercurial inunction; but it sank. Lastly, Ricord and Bassereau speak of another new-born child, the subject of deeply ulcerated tubercles, which recovered by the aid of iodide of potassium given to the nurse. But in this case mercurial inunction had at the same time been practised on the child, so that mercury may claim a part, at least, of the honor of the cure.

Deville[1] has collated the cases of four children affected with syphilitic coryza, who were rapidly cured by iodide of potassium administered directly to them. In the only one of these cases given in detail the disease proceeded from the mother, who had presented secondary symptoms only. As regards the child, it had, in addition to the coryza, a superficial ulcer on the *velum palati*, and non-prominent red patches about the anus, some of which were ulcerated superficially. The treatment was conducted by Nélaton. While congratulating the patient on this happy result, it must by no means be overlooked that, neither in the symptoms of the child, nor in the disease of its parents, was there anything to make the practitioner suspect the existence of tertiary syphilis.

[1] Bouchut, Traité prat. des Mal. des nouv.-nés, p. 869.

The reservation which I have just made appears to me the more rational because I find, on looking over the cases of syphilitic children, with reference to the lesions most resembling tertiary lesions in the adult, that in those in which recovery took place it is not the iodide which effected the cure. In pemphigus, Bertherand saved his patient with bichloride of mercury. The same treatment had the same success in Galligo's two cases. Depaul attained an equally satisfactory result by this course. As regards visceral lesions, as they have scarcely ever been recognized hitherto except on *post-mortem* examination, few writers have given directions for the treatment suited to them. I know no one except Gubler who has touched upon this subject, and he clearly expresses his preference for iodide of potassium. In induration of the liver "it is to that remedy," he says, "that we must have recourse."[1] Unfortunately, his assertion is rather refuted than confirmed by experience; for the only cure which he quotes, and which belongs to Cullerier, was due to proto-iodide of mercury. Gubler asserts, it is true, that this pharmaceutical combination *unites to a certain extent the advantages of mercury and iodine.* But practice formally contradicts such an assertion. It is as mercury, as *anti-secondary*, that the proto-iodide of mercury has been extolled by Ricord, that I employ it daily, and that it is universally prescribed by practitioners. Its triumph is in the secondary period; in the tertiary, when preparations of iodine are suitable, it remains comparatively powerless. Facts will not change to meet the requirements of a doctrine; and facts oppose themselves with all the eloquence of their free and spontaneous language to the interpretation which Gubler seeks to enforce.

And yet, in spite of the little encouraging result of the attempts made with this remedy, I will not give up the hope of seeing it one day assume the rank in the treatment of congenital syphilis which it occupies in that of symptoms in the adult. But the researches to be instituted on this subject must be undertaken with extreme reserve and discretion. Care must be taken, while seeking to cure the patient more thoroughly and more quickly, not to deprive him of the remedy which the experience of ages recommends as a very adequate specific. It will therefore be by associating the iodide with mercury, rather than by prescribing the former alone, that we must seek to derive benefit from it. This course is imperative in the interest of the patient; and, let it be said, it is fortunately compatible with what reason suggests, for the serious and deeply seated symptoms of the new-born child resemble much less the tertiary lesions of adults than those which are called *transitional.* But, as every practitioner is now aware, the most efficacious remedy for the latter is not iodine alone, but iodine and mercury given simultaneously. In trying the two agents in combination against the serious changes of congenital syphilis, we

[1] Gaz. Méd. de Paris, 1852, p. 358.

should at one and the same time satisfy the most legitimate suggestions of experimental analogy and the rules of the most scrupulous prudence.

To have fixed the limits and the virtues of iodide of potassium in the special cases before us is to have determined implicitly those of mercury; for such is the specific character attributable to these remedies that the curative action of the one commences precisely where that of the other ceases, and that the recognized impotence of the former against a given symptom is the best guarantee of the power which the latter will possess to combat it. This appropriation to distinct cases, a valuable resource for the practitioner, is a no less advantageous simplification for the writer on syphilis, who finds in it a means of abridging his task without leaving it unfinished, since the indication for mercury (with the reservation specified above concerning their combination) exists whenever that for iodine is wanting.

This means that mercury will constitute, in congenital syphilis, the ordinary and essential basis of the prescriptions of the practitioner. A very simple reflection shows to what extent it is suitable to the symptoms in new-born children; it is that the treatment of them has gained nothing in certainty or promptitude since the discovery of iodide of potassium. The ancients administered mercury only, and cured them as well as we do. It is legitimate to try something else at the same time and in addition to mercury; but nothing could authorize us to abandon its use, and to substitute another remedy for it. It is always among the preparations of that metal that we must seek the specific remedy for congenital lesions, in whatever form they manifest themselves.

If, however, the child did not receive the syphilis from its parents; if it had contracted it accidentally, as the consequence of a primary chancre; if the disease, after having passed through its secondary phase, presented tertiary phenomena, the perfect identity of cause and effect between this affection and that of adults would imperatively point out the preparations of iodine, to the exclusion of those of mercury.

[What anti-syphilitic remedies shall be chosen is a point upon which there is much diversity of opinion, but after weighing carefully the various merits of the two principal ones, I should unhesitatingly give the preference to mercury, not only during the earlier stages or manifestations of the syphilis, but also for the later, the tertiary ones. The distinction laid down by M. Diday, that the iodide of potassium is indicated "when the child is affected with symptoms more or less analogous to tertiary symptoms in the adult, and especially with visceral lesions; secondly, when the parent who has transmitted the disease to the child was, at the time of the transmission, in the tertiary stage of the affection," seems to me to be unfounded. It is in just such accidents, in the "tertiary" lesions, that the most brilliant results from the administration of mercury are obtained; it seems to be the remedy par excellence. Far be it from me to decry the

advantages derived from the iodide of potassium, but I do not regard it as more than an excellent adjuvant in the treatment of syphilis, be the disease of the acquired or the hereditary variety. It will relieve many of the manifestations of syphilis, and perhaps cause the disappearance of others, but this relief is only temporary, not permanent, and the surgeon has in the very large proportion of cases, to fall back upon mercury in some form to effect a cure. There is no surgeon in venereal practice who does not see daily instances of the truth of this statement.

The iodide of potassium is far more likely to disturb the child's bowels and digestive functions than is mercury, and in cases where diarrhœa is one of the symptoms present, I believe the administration of mercury is less liable to irritate and is preferable. I must confess to some degree of skepticism about the case reported from Bassereau, where the child was cured by administering large doses of iodide of potassium to the nurse, and on referring to the case in the original ("Traité des affections de la peau, symptomatiques de la syphilis"), I believe it is open to the objection that the case was not one of infantile syphilis at all. Hence the value of the iodide of potassium in the treatment of this class of cases, whether given directly or through the nurse, remains unproved. The second history is decidedly modified, as proof, by the fact that the child was treated by mercury directly, and its death, notwithstanding the treatment, does not alter the fact that the value of iodide of potassium in these cases still remains unproved.

On p. 239, M. Diday makes a statement which is more in consonance with the views of the present day. He writes: "The reservation which I have just made appears to me the more rational because I find, on looking over the cases of syphilitic children, with reference to the lesions most resembling tertiary lesions in the adult, that in those in which recovery took place, it is not the iodide which effected the cure." And this, as can be seen from what I have already written upon this subject, I believe to be the case in the majority of instances. Mercury is the trump card, so to speak, in the treatment of syphilis, whether of hereditary or acquired origin, and I protest against the statements advanced, that mercury in the tertiary stage, when preparations of iodine are suitable, remains comparatively powerless. My own experience has not taught me the correctness of this view. As to the combination of the two drugs, there may be occasions when it is desirable, but even there mercury cannot be dispensed with.—F. R. S.]

V.—*In what Pharmaceutical Form must the Anti-syphilitic Remedy be administered?*

It would be quite out of place here to speak of the rules to be followed in the administration of remedies to the nurse when the indirect mode of treatment is to be employed. That she shall experience their action without being inconvenienced by it is the sole end which can be proposed; and, to attain it, all that is necessary is to consult the special writers who have laid down rules for the anti-syphilitic treatment of the disease in adults.

The direct treatment, the only one with which we have to deal, includes two very distinct classes of agents—those for internal, and those for external treatment.

A. *Internal Treatment.*—The only form in which remedies can be given to infants consists in dissolving or suspending them in a fluid, or in mixing them with a substance soft and pleasant to the taste, such as honey or jelly. Milk, sugar, and water, and at a more advanced age broth, are perfectly suitable as vehicles for fluid or soluble remedies. In these cases Doublet and Bertin usually employed a spoonful of the following mixture:

Gum Arabic..... 12 parts.
Sugar ..... 10 parts.
Dissolved in 375 parts of boiling water.

As for substances in powder, or insoluble in water, it is more simple to give them in a spoonful of porridge or pap. Calomel, if it is desired to have recourse to it, may with advantage be mixed with powdered sugar.

Children of this age cannot swallow pills. I should not even have taken the trouble to allude to this, if I had not seen them recommended by one of the authors who has nevertheless treated the question the most practically, viz., Lamauve.

Syrups are also excellent vehicles, especially for children of some months old. They very readily take the iodide of potassium in syrup of orange peel or of peppermint. Henriette's method of effecting the swallowing of remedies *introduced by the nostrils* will often be found very useful under these circumstances.

As regards the kind of preparation to which preference is to be given, I must remark that it is of less consequence to have a large number of them at our disposal than to know how to choose the best. I attach very little importance to varying them and replacing one by the other, but a great deal to superintending the chemical purity and careful officinal manipulation of them. One good formula is sufficient, and it would be very useless to parade in these pages the tiresome catalogue of all the for-

mulæ which speculation has imagined and propagated for this special department of therapeutics.

There are, first of all, certain remedies which ought to be discarded, at least as a general method of treatment. Thus calomel, which purges and is not observed, the proto-iodide, which is so difficult to administer and tends more than any other preparation to produce salivation, should be reserved for exceptional cases, viz., calomel when it is necessary to fulfil a purgative or vermifuge indication without discontinuing the anti-syphilitic; and the proto-iodide when very serious complications compel us to develop promptly, at all risks, the whole power of the specific treatment. Apart from these, it is to the bichloride that we must have recourse. Easy to divide and to dissolve, its effects upon the child are the more readily recognized by the practitioner because he has had more frequent opportunities of studying them in the adult. If it be true that it irritates the digestive passages and produces slight salivation, these are unimportant phenomena, easily subdued. They even have their advantages, since, unless we are acting upon organs particularly susceptible, they do not become developed until the treatment has been carried far enough, and consequently prove valuable indications to point out to the practitioner the limits, whether of time or of doses, which it is necessary to reach, but would be useless to pass. I confine myself, therefore, to the bichloride dissolved in a fluid (as is the case in Van Swieten's solution), or in a syrup (such as Bellet's improved syrup, generally well borne by children). As it is necessary, however, to provide for cases in which a remedy, although excellent, must be replaced by another, either because use has impaired its action or because it encounters an incompatible or refractory idiosyncracy, I should recommend subsidiarily Plenck's gummy mercury (if a treatment less irritating but also less powerfully curative than the bichloride be desired), or the cyanide of mercury (if it be wished to keep up an action equal to that exercised by the bichloride). The iodide of potassium should always be administered in syrup; it does not produce either repugnance or gastro-intestinal irritation. It is not necessary, therefore, to seek either a corrective or succedanea for it.

B. *External Treatment.*—The skin, at an early age, presents to anti-syphilitic remedies the two conditions, favorable yet contradictory in appearance, of a surface eminently absorbent and very little susceptible of being irritated by their contact. It is then, so to speak, predestined to serve as a channel for their introduction. The works of several writers on syphilis, and particularly those of Cullerier, tend more and more to reinstate it in this office, and give special importance to the rules fitted to insure the most certain and efficacious employment of this treatment.

It is usually the mild or strong mercurial ointment which is selected for frictions. It is better, in my opinion, to increase the proportion of the

fatty matter, notwithstanding the larger quantity of ointment necessary for each rubbing in. The treatment is neither retarded nor protracted thereby; and we may, by this means, avoid the cutaneous irritation which, although rare at an early age, would be very prejudicial, from forcing us to suspend the frictions.

To what part of the body must the ointment be applied? An old custom points out the lower extremities as the best place, and in them the inner surface. This choice is justified in the adult by the greater delicacy of the integument there, but in the child, in whom the skin is equally thin everywhere, we may dispense with following this rule. Cullerier justly observes that the legs and thighs being at this age almost constantly soiled and irritated by the urine and fecal matter, the mercurial frictions add a fresh source of irritation, which cannot fail to be detrimental. He prefers the application of mild mercurial ointment to the lateral surfaces of the chest. A larger surface is, moreover, there acted upon, and one in the vicinity of the axilla, a region whose absorbent faculty is so often taken advantage of in practical medicine.

Brodie, whose predilection for external treatment I have already alluded to, carries it out in the following manner: the knees of the new-born child are loosely enveloped in a flannel band, the inner surface of which has previously been smeared with mercurial ointment. It must be renewed daily. The movements of the child cause the band to slip up and down and effect the friction naturally.[1] Dr. Snow confirms the efficacy of this treatment by relating the case of a woman whose last child, the only one subjected to it, was the only one which survived. The four preceding children had either died at birth, or had sunk in a short time with symptoms of syphilis.[2]

Baths employed, before treatment, to render the skin more absorbent are little needed in children. But, in them as in the adult, the frequent use of baths, or washing with soap and water, is necessary during the treatment, to remove the layer of mercurial ointment left by the preceding frictions. Without this precaution the ointment might become rancid and produce erythema; at all events, its presence would be an obstacle to the complete penetration of the remedy when reapplied. The degree of force to be given to the friction, its duration,[3] the temperature[4] to be kept up during the application of it, present nothing peculiar at an early age. The quantity of the ointment and the interval to be left between the frictions will be spoken of further on under the head of *doses*.

Mercurial baths are a good adjuvant to frictions. They might, no

[1] Lectures Illustrative of Various Subjects, p. 245.

[2] Abstract of the Med. Sciences, p. 282.

[3] From six to ten minutes, according to age.

[4] It is necessary, especially with young children, not to rub in except near the fire or in a well-warmed room, if the weather be at all cold.

doubt, effect a cure alone; but it would then be necessary to give them too frequently, and they would become debilitating. And even if repeated very frequently, they would in many cases allow of the advance of the disease and of the derangements which it is so important to arrest in good time. Employed from time to time, on the contrary—every three or four days, for instance—during the endermic treatment, they concur, first, to insure the curative effect of the frictions; and more directly, to accelerate the cure by the aid of the quantity of mercury which the whole surface of the skin absorbs during immersion. The bichloride of mercury is the preparation which is almost exclusively employed for these baths.

I shall not speak here of lotions, plasters, fumigations, etc. In spite of the influence which they exert on the general disease, these various means are usually regarded as forming part of the local treatment. I therefore reserve what I have to say about them to the chapter devoted to that subject.

[The forms in which the remedy may be administered generally resolve themselves into the two following, viz., the ointments and solutions. Sometimes powders are given; much less frequently than they might be. They form an excellent way of administering mercury internally, as they can easily be laid upon the tongue and left to take care of themselves, and besides the child cannot reject them as it can solutions.

The objections which M. Diday makes to calomel are, I think, not supported by facts; it is perfectly safe to administer, provided it be given properly, without producing the purging which our author states to be its objectionable feature. Thorough trituration undoubtedly increases its action, and when given with sugar will be readily taken by the child. By this method, a quarter of a grain rubbed up with three to five grains of powdered sugar will do as much good as one or two grains given crude. The amount may, of course, be increased as the surgeon thinks requisite. But there is one point in which I am strongly at variance with M. Diday, and that is when he says that irritation of the digestive passages and slight salivation are "unimportant phenomena." These "phenomena" should be particularly and carefully avoided, no matter whether the agent given be calomel or the bichloride. They are impediments to the proper action of the drug and are liable to produce serious trouble. They should never be induced, and should they by accident come on, they should at once be checked and the treatment suspended until these "phenomena" have entirely disappeared. Salivation in a baby is difficult of detection, it is not an easy thing owing to the common habit infants have of drooling. The mercurial fetor is the best symptom to go by, and I repeat again that neither this salivation nor intestinal irritation should ever be allowed to occur, and should they unfortunately appear, they should at once be checked.

If the bichloride be the form selected, it is best given in solution.

Syrups are apt to become sour, and are better avoided. The simpler the preparation, the better. Hence an aqueous solution is the most preferable mode of giving the mercurial, and this, in turn, should be dissolved in milk, which the child will readily take.

The old-fashioned Pulvis Hydrargyri cum cretâ is also a very useful preparation in these cases of infantile syphilis, in doses of from three to five grains. The chalk corrects the laxative effect of the mercury and also prevents the griping of the bowels. The powder may be used either alone, or else rubbed up with sugar.

The iodide of potassium should not be given unless some special indication occurs for its use. A better way of giving it is in milk, far preferable to syrup, as the milk renders the iodide almost tasteless and in this manner of administration it is blander. But I again repeat, that it is not preferable to mercury, and should never be expected to take its place.

The external use of mercury in the shape of inunctions, I have already mentioned. In this country, there is no division into mild and strong ointments. The preparation used here is of uniform strength, although it may be varied by its admixture with other substances. Vaseline, so extensively used at the present day, is by far the best excipient for mercury, as it does not turn rancid, no matter how long it be exposed to the air, and being unirritating, produces no erythema of the skin nor mercurial eczema. It is, moreover, readily absorbed, and so does not require the same amount of friction that the ointments which are prepared with fat do. The manner of applying it I have already described, and I think the plan I have advocated is better than Brodie's, as it is absorbed fully as well and is not so likely to be displaced as when it is bound round the knee. The thighs, legs, and neck should never be selected as spots for inunction, as the skin is apt in those spots to be abraded, and if the ointment is applied there trouble is apt to ensue.

In using inunction it is particularly desirable that the ointment should not be washed off—on the contrary, it should be retained as long as possible. Each course of mercurial frictions should be of seven days' duration, and then should be suspended for three or four days, when the internal administration of the medicine, in the manner already advised, may be given. There is no reason, if circumstances require it, why the two methods should not be used together.

I have already stated my objection to the mercurial baths for children, and I am not convinced about the "quantity of mercury which the whole surface of the skin absorbs during immersion."—F. R. S.]

VI.—*In what Dose and according to what Progression is the Remedy to be given?*

This subject is one of the most important, the one of all others perhaps which most urgently calls for a radical reform. I wish to state very distinctly: All the rules in force on this point are dictated by prudence, not one by a correct understanding of the real therapeutical requirements. There is no author who does not point out the dose which should not be exceeded; very few take into account the one which must be attained. No doubt the delicacy of the child and the susceptibility of its digestive organs explain such apprehensions; but they must not deter me from alluding to the exaggeration of them. The general practice in this respect errs, as I think, on the side of timidity. We intrench ourselves behind the fear of gastro-intestinal irritations, behind the circumspection which experience renders, it is said, a duty, and forget the fearful and rapid severity of the disease. And what happens? From fear of doing harm the practitioner neglects the opportunity of doing good; and too often, from being afraid of injuring his patient, he lets him perish.

I need only choose at random to justify these remarks. The initial dose recommended in most works is so small that it becomes almost insignificant. Bertin fixed it at the twelfth or twenty-fourth part of a grain of the bichloride daily. Lamauve, somewhat bolder, recommends, however, that more than the sixth of a grain should never be given in a day. Bertherand begins with the twelfth of a grain only. Cullerier prescribes the sixteenth of a grain at first; it is true that he afterward goes on to a quarter of a grain and employs mercurial baths at the same time. But the most timid of all is Baumès, who begins with the twentieth or even thirtieth of a grain, to arrive progressively at an eighth or a quarter, but only in the case of a child which has been weaned.

Some authors, however, have not been afraid of adopting a more decided practice. Bassereau, in his chapter on the syphilodermata of infants, says, "that the medium doses given to adults ought then to be reduced to a quarter or a third." I see also that Landmann cured a child at the breast, very seriously affected, by administering to it daily as much as three-fifths of a grain of Hahnemann's soluble mercury, besides lotions of a solution of the bichloride.[1] I second to the utmost of my power this salutary reaction. In a therapeutical point of view, infantile syphilis appears to comprise two species: one which consists in external lesions only and does not sensibly affect the constitution; the other which produces a general falling off, rapidly fatal if the disease is left to itself. But, if it be permitted to temporize with the former, to select the least irritating remedies, to sacrifice something to the *jucundè*, this is no longer the case with

[1] Ann. Méd. de la Flandre occidentale, 1852, p. 408.

the latter. When the vital powers have already been compromised during intra-uterine life; when the essential viscera are probably affected; when birth itself creates new dangers by depriving the child of the elements of nutrition which it received from its mother, and by multiplying the external causes which provoke diathetic manifestations,—then every day is fatal, every hesitation may become deadly. In my opinion, to stickle at the doses when death is at hand and we have the specific at our disposal, is an error the persistence of which in the present day will cause surprise hereafter. And, to sum up in few words, since we know how to cure and almost always do cure adults, I ask myself why, even when treated early, we so often let infants perish.

I do not forget, however, that the curative dose is not that which is swallowed, but that which is absorbed. Without doubt, taken in a quantity sufficient to irritate, anti-syphilitic remedies cease, for that reason alone, to act upon the disease. But an important distinction must be borne in mind here. The chief phenomena produced by mercury are of two kinds: inflammation of the digestive canal, and salivation. But each of these has its peculiar signification. The first may occur long before the dose required for the cure has been reached. The second, on the contrary, does not supervene until this dose has been approached. The one is a danger without anything to compensate for it; the other brings with it its own instruction; for it shows that the mercurial action is attaining the limit at which it becomes sufficient, and beyond which it would be detrimental. Hence follows a double consequence: avoid the gastro-intestinal irritation; avoid it always, as much as possible, even from afar off; but wait, on the contrary, until a certain degree of inflammation of the gums and mercurial fetor manifest themselves. When there is danger of death, as in congenital syphilis, this valuable criterion can alone point out how far the administration of the remedy must be carried. So far we must go then; for, short of this, we should be in danger of letting the derangements gain ground. Moreover, this inconvenience, unimportant when its appearance is carefully watched, is always easily and certainly obviated by the suspension of the mercurials.

Salivation, such a valuable guide generally, is still more so when the treatment consists in baths and frictions only. We may, indeed, determine approximately the dose of a remedy taken internally; for we know that it will be absorbed almost entirely, and we are able from this datum to increase the quantity progressively and to continue the use of it during the time fixed by common experience. But absorption through the skin is so variable and, in consequence of a great number of conditions, so capricious, that it would be impossible to calculate its effect, to know when it is necessary to modify the proportion of the remedy, to suspend or to abandon it, if we had not, in stomatitis, an indication incapable of deceiving us on these important points. This will be then, especially here, the

guide which we must follow in preference to the vague data furnished by authors. When we have once recognized in the breath of the child the slight fetor characteristic of the mercurial action, we may be satisfied and diminish the doses. The impression of the remedy upon the organism is then produced, and produced to a sufficient extent. The practitioner has then effected, in that respect at least, all that was in his power; and if the health of the child is not re-established, it is in other sources of danger that he must seek an explanation and a remedy. Nevertheless, it is necessary to keep up, to a slight extent, this irritation of the gums which announces the mercurial action necessary for the cure; for perseverance in an efficient dose is indispensable to effect a perfect cure. I shall, moreover, soon have occasion to return to this point. All that I wished to establish here is that, in presence of lesions which threaten to become fatal, the practitioner is fully authorized, I should even say that he is obligated, to increase the doses rapidly until he has produced a moderate degree of the characteristic salivation.

The manifest and gradual decrease of the visible symptoms would be a good indication that the effect of the remedies suffices. If we see it produced, it is useless to ask for other guides in determining the doses. But, in general, we should lose much time if we waited for it; and here time is very precious. It must, moreover, be borne in mind that the fading of the color of syphilodermata, and the declension of the mucous patches, may supervene spontaneously or from mere attention to cleanliness. We must take care, then, not to allow ourselves to be imposed upon by this fallacious abatement; and, so long as the constitution retains the special stamp of syphilis which indicates serious internal changes,—so long as strength, sleep, and plumpness are absent, must persist in the treatment and increase the doses rapidly. To be more precise, I will say that we may commence by administering one-tenth of a grain of bichloride or three-twentieths of a grain of Hahnemann's soluble mercury, in three doses, in the course of the twenty-four hours. This quantity may be augmented one-twentieth of a grain every three days until it produces a sensible effect either upon the mouth, or upon the syphilitic symptoms. The daily quantity may then be diminished, as is done for the adult, so as to keep up a slight action on the gums, or rather so as to reproduce it, several times in succession, during the whole course of the treatment.

A convenient way of dividing these remedies exactly is to dissolve a given weight in a certain number of spoonfuls of distilled water. By then taking a spoonful of this mixture we know exactly the quantity we administer. The frictions will be made with from fifteen to thirty grains of mild mercurial ointment at first, and repeated once a day. More may afterward be used, if necessary, for each rubbing in. If the skin be very sensitive, they must be repeated every second day only. The baths contain half a drachm of bichloride. This quantity is afterward increased, by fifteen

grains at a time, to a drachm or a drachm and a half, according to the age of the subject. These baths are to be repeated every two, three, or four days.[1]

It appears superfluous to give the exact formula for the lotions, pomades, injections, etc., destined for the treatment of syphilitic infants. Besides the circumstance that these formulæ must be varied according to the cases and the individuals, and in the same individual according to the phases of the affection, it is so easy to copy them, with the desired modifications, from those used for adults, that there would be no advantage in entering into more extensive details on the subject.

The iodide of potassium may be administered by commencing with three-quarters of a grain and increasing the dose rapidly, notwithstanding the stoppage in the nose (capable of simulating syphilitic coryza) which might result from it. I will not state the dose at which it might be necessary to stop ; the special tolerance of the organism for this agent does not render it so necessary to fix a limit for it as for mercury. It would be the more inopportune to attempt to determine the dose *à priori*, since the curative action of the remedy is sometimes not manifested except from a very considerable dose. It is, moreover, to be understood that the rules I have just laid down will differ according to the age of the subjects, as well as according to their strength, the degree of their development, and a number of other conditions which it is the office of the practitioner to estimate at their exact value.

Struck with the possibility of raising with impunity the doses of iodide of potassium, and those of the preparations of mercury externally, I consider it my duty to call the very particular attention of practitioners to the propriety of composing the treatment of infants of mercurial baths and frictions, and of the iodine given internally at the same time. Ought not the association of mercury and iodine, so fruitful in good results in the adult, to be tried more frequently in the child than is done at present? Whether as a general method or reserved for the cases in which one of the two agents has proved inefficient, I do not hesitate to recommend this treatment by combination, which, thus practised, has none of the disadvantages pointed out by my honorable and very learned successor, Rodet.

[As to the dose. Children who are the subjects of inherited syphilis, bear mercury remarkably well, better even than patients of a larger growth, so that the amount given may be larger than the rule when other medicines are given to children. What M. Diday says on the head of timidity is very à propos, not only as regards the treatment of the hereditary but of the acquired type of the disease. Many practitioners seem to be afraid to use mercury with any degree of confidence ; they seem to be afraid to

[1] These baths, if too concentrated or repeated too often, sometimes produce an erythema, the bright color and almost instantaneous appearance of which over the greater part of the body may seriously alarm the parents.

give the drug in sufficient quantity to combat the syphilis, and attempt to compromise. In the treatment of hereditary syphilis there can be no compromising, either the disease must be checked or else it will get the upper hand, and to control it, the drug selected must be used as freely as safety will admit of.

The amount of mercury, supposing that medicine to be the one selected, should be given more freely than is usually advised in works on this subject, and the preparations should be those which will produce the least disturbance to the child. The time-honored bichloride is the form usually given, and although it often produces favorable results, its tendency to induce gastro-intestinal disturbances makes it less eligible for protracted use than it otherwise would be. Here is where the local application of mercury presents such decided advantages in that it is tolerated for long periods without disturbing the nutrition of the child or deranging its alimentary canal. On this point, I shall revert further on.

M. Diday speaks of infantile syphilis comprising, in a therapeutical view, two species: "One which consists in external lesions only and does not sensibly affect the constitution; the other which produces a general falling off, rapidly fatal if the disease is left to itself." These points should not be lost sight of, they bear in a very important manner upon the treatment of inherited syphilis. In the former instance the treatment will, of course, not need to be so energetic as in the latter, where the remedy must be used in as full doses as it is possible to give the child, and particularly that it shall not induce any irritation or disturbance which shall further debilitate its already weakened and vitiated constitution.

Touching the views laid down by our author upon the advisability or even the necessity of inducing salivation, in whatsoever slight a degree, in the infant, I cannot but express my most unqualified dissent. Not only is it unnecessary, but it is absolutely bad treatment; it is adding another and serious illness to the one already existing, and moreover preventing the remedy from producing its beneficial effects. Nothing of the kind should be tolerated for one instant, and the moment any such accidents occur, the remedy must be abandoned until they have passed off. The advice "avoid the gastro-intestinal irritation" is excellent; I wish I could say as much for the "wait, on the contrary, until a certain degree of inflammation of the gums and mercurial fetor manifest themselves." "Short of this we are 'not' in danger of letting the derangements gain ground." There is much more danger in having this symptom supervene. To insist that "it is necessary to keep up, to a slight extent, this irritation of the gums, as necessary for a cure," is, I believe, to insist upon a dangerous course and one which should not be followed. Nor is it necessary that "in the presence of lesions which threaten to become fatal, the practitioner is fully authorized, I should even say that he is obligated (sic) to increase the doses rapidly until he has produced a moderate degree of the

characteristic salivation." Far from this being the case, I should believe that this course would facilitate the "fatal" result.

The best and safest guide for the administration of mercury is the disappearance of the symptoms as well as the restoration of the child's health, and this attained, the utmost that can be expected from the medicine has been obtained. Suppose that the symptoms do occasionally disappear by themselves, is it not a sign that the child's constitution is strong enough to overcome the poisoning to which it has been subjected, or, at any rate, to make a strong effort in that direction. Why then try to depress its vital powers, which is done by salivating it, and so diminish its chances of resistance? Nor is this abatement "fallacious;" it is on the contrary a good and safe guide as to the beneficial effect of the treatment, nor would a child who was thus able to show a disappearance of the external manifestations, even though it did so unaided (a rather unlikely supposition, by the way), long manifest absence of "strength, sleep, and plumpness."

The dose prescribed is not an excessive one, in some cases it might be increased without detriment, but during its continuance a careful watch should be kept over the child to control and prevent any signs of salivation and gastritis, or gastro-enteritis.

When frictions are resorted to, the amount to commence with should be thirty grains or half a drachm of the mercurial ointment (U. S. P.), and this can be increased as occasion requires. This should be applied every second or third day, and not, unless extraordinary necessity exist for it, every day. If it be used in the manner already advised, no danger need be feared of the ointment producing any local trouble, such as erythema or mercurial eczema.

As to the use of the iodide of potassium. It is seldom that the iodide should be given the preference over mercury in the treatment of hereditary syphilis. It is not as certain nor as effective as mercury, and is, in my opinion, more likely to disagree with the infant. When advisable, it may be given in larger doses than advised by M. Diday. When given in doses of one to three grains thrice during the day it is less likely to produce coryza than when given in the smaller amount of three-quarters of a grain, just as is found in the case of acquired syphilis, where a dose of ten or fifteen grains is less likely to produce inflammation of the Schneiderian mucous membrane than when three or five grains is the dose.

The combination of the iodide and mercury is the best form to administer the drug, preferably separate when either drug can be increased, if requisite, independently of the other.—F. R. S.]

VII.—*What is the Duration of a Course of Anti-syphilitic Treatment in Infants?*

It is evident that no absolute rule can be laid down on this point. The duration of the treatment depends, first of all, upon the severity of the disease. The more the latter compromises the patient's life, the more important it is, by the prolonged use of remedies, radically to destroy its germs, and to prevent relapses. As a general rule, then, the syphilis which attacks the viscera and weakens the constitution will necessitate a longer course of treatment than that of which the effects consist only in the eruption of erythemo-papular syphilodermata, without any deeper lesion of the vital powers. Secondly, if the remedies cannot be given to the child except through the medium of the nurse, while their efficacy, by this channel, is less, we can understand that it will be prudent to make up, by the aid of a larger administration, for the insufficiency connected with the special mode of their introduction into the economy. Sometimes also very active treatment is indispensable to subdue threatening symptoms; but, when once the danger has been overcome, we must relax the rigor of our prescriptions, which might themselves produce bad results. In seeking to determine the time to be devoted to the cure, we must also take into account the variations which the doses have undergone, whether it be that they have been lessened from prudential motives, or that a little irritation of the digestive passages or commencing salivation has forced us to diminish them, or even to suspend for a time the administration of the remedies.

The employment of specific remedies must be continued some time after every manifestation of syphilis has disappeared. All pathologists agree on this point, but we must eschew the excess of caution which leads to an almost indefinite perseverance in the administration of them. By continuing them without reserve, we accustom the organism to their action; and we thus deprive therapeutics of resources which it is impossible to affirm might not be required ultimately, nothing being more common than relapses, which decrease in severity progressively, it is true, of the most methodically treated syphilitic diathesis. The practitioner will therefore take care to observe a circumspect mean in this respect between too much and too little, but chiefly by avoiding the latter. It is also necessary to take into consideration the more or less prompt manner in which the visible symptoms have been modified by the remedies. This affords us an exact indication of the particular degree of curative action which they exert relatively to a given individual; for, like all forms of syphilis, all persons affected with syphilis are not equal in this respect. Changes of the nurse, the existence of worms, thrush, convulsions, diarrhœa, the disorders of dentition, etc.—are causes of evolution peculiar

to infants; they may occasion relapses, and consequently point out the resumption or prolongation of the anti-syphilitic treatment. But each special case suggests to the practitioner his rule of conduct in this respect. I can here only advise him to redouble his vigilance at these various periods; nor then to suspend the treatment prematurely before he sees whether the disease will not acquire new force at that moment, or whether, if it had previously become extinct, it will not manifest itself afresh.

Apart from all peculiar circumstances, it appears to me that a *three months'* course of treatment is sufficient in infants, on condition that it be with mercury, and on condition that it be administered directly to the patient himself. It is to be understood, moreover, that this *à priori* determination is and ought to be approximative only. To observe the modifications of the symptoms which the remedy occasions; to study the tolerance of the organism, and its susceptibility to the effects of mercury; to distinguish, among its effects, those which prove that it is acting sufficiently from those which furnish grounds for fearing that it is acting too much, will always be the best means of ascertaining the limit most capable of restoring health to children, and of reassuring families.

When the indirect mode of treatment is the only one possible, it is necessary, from the real inferiority of its curative powers, to continue it for a much longer time. The simultaneous use of iodide of potassium (until, at least the suitability of this agent in congenital syphilis has been better established) could not authorize us to abridge the administration of mercury. A valuable auxiliary in certain cases, it would become more dangerous than usual if we assumed it to possess this property. As for the period of time during which it must be prescribed, this will vary according to the indications and according to the effects obtained.

[The duration of treatment must of course depend upon a variety of conditions, hence no general rule can be laid down, but I certainly think that the limit of three months assigned by our author is altogether too short. Six months at least, in many cases twelve months, would be a much better limit to assign; but be the duration what it may, the treatment ought not to be suspended until *all* symptoms have entirely disappeared. As soon as that point is reached, then it should be discontinued, first, because its continuance is not productive of good, and second, because in abandoning it, the surgeon will give any future manifestations a chance to appear, and he himself will be in a better position to judge whether the disease has been fairly overcome or whether it has only been held in abeyance by the remedies administered.

But each case must be judged on its individual merits, and any rules on this point must of course be purely approximate and not absolute. —F. R. S.]

VIII.—*With what Sanitary Precautions must the Child be surrounded to promote the Curative Effects of the Treatment?*

No age appears at the first glance more propitious than this for assembling around the patient all the conditions which insure the effect of specifics. The command of the practitioner over his patient is complete. He has not, from that quarter at least, to fear the omissions, to combat the resistance, to meet the departures from regimen which, in the adult, often paralyze the best combined treatment.

Unfortunately, other influences sometimes neutralize the good result of these. Among them must be placed first what concerns nutrition, so difficult to attain generally in syphilitic children. It is here that the incessant vigilance of the practitioner is needed. First of all, it is necessary to procure them a nurse, and, as far as possible, a healthy and robust one. I have already explained that, the advantage of a mercurialized milk not equalling that of a milk normally substantial, it is better to renounce the benefit of the indirect treatment than to purchase it by employing a nurse who takes mercury only because she has syphilis, and, consequently, a mammary secretion of inferior quality.

Natural lactation, difficult in private families, is frequently impossible in hospitals. An active cause of death, artificial lactation, however careful, however perfect it is supposed to be, ought not to be allowed unless there is an insurmountable obstacle to doing better. It will be remembered, then, that a syphilitic nurse, but one who consents to undergo treatment, would, in such a case, be far preferable to the feeding bottle. A goat or an ass would also replace it with advantage; and I cannot too strongly direct the attention of hospital authorities to the urgent necessity of organizing in their special departments means of lactation of this kind.

One very significant circumstance demonstrates the pernicious influence exercised by artificial lactation independently of all other morbid causes. Valleix[1] tells us that in the hospital for sick children at Paris a prejudice widely spread among the officials of the establishment leads them to consider every child, the subject of a cutaneous affection, however simple, as syphilitic. In consequence of this opinion they are often deprived of nurses, and considerable mortality, which does not fail to be placed to the account of syphilis, occurs in these cases.

The temperature to be maintained around children affected with syphilis is one of the most important points of their special hygiene. Positive observations prove: 1. That the poison of chancre loses its inoculable property by heat, while it retains the same if kept cold. 2. That constitutional syphilitic affections, previously refractory to treatment, are easily

[1] Cliniq. des Mal. des Enf. nouv.-n´s, 1836, p. 665.

cured by the aid of a change of residence, or a sojourn in a more southern country. 3. That the appearance or return of secondary or tertiary lesions very frequently supervenes as a consequence of a decrease of temperature, and occurs by preference at the change of the seasons, periods at which the causes of *taking cold* are more active. If, on the other hand, we take into consideration the necessity for warmth, a condition organically inherent in infants; if we reflect that exposure to cold is one of the morbid causes which carry off the greatest number of infants, and the starting-point of their most serious diseases (erysipelas, pneumonia, scleroma), we shall admit the very especial utility of developing a sufficient degree of warmth, and above all a continuous warmth, in the locality devoted to syphilitic nurslings. The writers of the sixteenth and seventeeth centuries had fully recognized the beneficial effect of a high temperature for the cure of syphilis. If they carried it to excess in their stoves, in which they sought to *sweat out the poison* by perspiration as well as by the saliva, we perhaps now infringe this rule too lightly by granting the requests of our patients for a mode of treatment which shall be, above all, *easy to follow secretly, and while travelling!* In all these cases, if the rigor of the old hygienic rules deserves to be resumed from time to time, this could not be done more appropriately than in the case of new-born children, in whom so many reverses show the comparative inefficiency of the therapeutic agents which usually succeed so well for adults.

The excretions ought to be the object of a no less careful attention. The orifices through which they pass being those around which the syphilitic symptoms are most frequently grouped, the importance of extreme cleanliness is evident. It is the more necessary because the contact of the urine and the fæces further compromises the success of the treatment by frictions, by rendering the skin more liable to the specific erythema which they produce. Frequent changes of linen, repeated emollient or slightly astringent ablutions, general baths used oftener than if syphilis did not exist, are therefore measures which must never be neglected.

The debility produced by syphilis, the chloro-anæmia which is a common complication of it, the disintegration of the blood-globules, the effect of mercurial preparations, all sufficiently indicate that the regimen of syphilitic children must be rather substantial than light. This must also be borne in mind in the inter-current diseases of syphilitic infants. Blood must then be abstracted more sparingly, and low diet less prolonged, while tonics are more strongly indicated. Sometimes the state of the blood will even necessitate the direct employment of ferruginous or ferro-manganic preparations with or without mercurials.

[The sanitary conditions to which the child is subjected are of the utmost importance, and if not of the proper kind must affect the result of treatment very decidedly. In the first place, the child must be warm. Independently of any question of disease, infants are keenly susceptible to

changes of temperature, especially those from a high to a low temperature. But although it is advised to keep the child warm, it is not meant that it is to be deprived of fresh air. This should be freely supplied it, but sudden changes from warm to cold air should be avoided, unless the infant is properly protected to meet these changes. If the child be kept in a hot room from which the air is rigidly excluded, it will be made worse instead of better. Hence, whenever practicable, it ought to be taken into the open air at least once every day.

The child's person must be kept scrupulously clean and dry, and care should be exercised that no opportunity exists for irritation of the skin from friction or from decomposition of the fæces or urine. During the periods of inunction it is not necessary to wash the entire surface of the body—only those portions of the skin should be washed which are liable to become irritated, such as the genitals, the genito-crural folds, the axillæ, and the folds of the neck.

The debilitated condition of the child must also be taken into account, and here the use of tonics plays an important part. The best preparation to be given is the iodide of iron, usually in the form of the officinal syrup, as it is well borne and has the other advantage of combining the tonic with an antisyphilitic remedy. It can be administered in doses of from two to ten minims thrice daily, in milk or sweetened gum-arabic water.—F. R. S.]

IX.—*When and how must the Influence of the General Treatment be Promoted by that of a Local Treatment directed to a Given Symptom?*

As a general rule, it is advantageous to let the syphilitic symptoms run their own course. After having subjected the individual who is the subject of them to the action of specifics, we may and ought to abstain from all local treatment. We may; for if the constitutional treatment be sufficient the manifestations will disappear under its influence alone. We ought; for the degree of resistance of these same manifestations is the best means which the practitioner has of judging of the propriety of diminishing, increasing, suspending, or renewing antisyphilitic remedies. If, then, we furthered the cure of them directly by topical remedies, their amendment, being then induced by the partial or exclusive effect of the latter, would no longer serve to determine the indications for general treatment; and, being deprived of one of its safest guides, the latter might either be prolonged more than is suitable, or else be regarded, on account of the rapid disappearance of the visible lesions, as sufficient when it was still very incomplete.

Certain exigencies, however, dictate the obligation to infringe this rule. The characteristic deformity which syphilis inflicts upon its victims fre-

quently renders them anxious to be disembarrassed as soon as possible from these compromising stigmas. But if we are sometimes compelled to yield to this wish in adults, nothing can engage us to do so in the infant; and if there were only this reason to induce the practitioner to accelerate by topical applications the disappearance of the visible lesions, he ought, unless permanent deformity is to be feared, to resist the entreaties which the parents or the nurse sometimes address to him on this point.

But other more legitimate indications not unfrequently present themselves at this age. From their nature or their extent, syphilitic lesions become, under certain circumstances and independently of the lethal action of the diathesis, direct and serious sources of danger. I class under six distinct heads, which may, however, coexist in the same subject, the cases in which such an effect is to be feared.

1. The lesions impede the performance of functions indispensable to life. Thus, those of the lips, of the cavity of the mouth, or of the nostrils, render prehension, suction, deglutition, and respiration difficult or impossible.

2. Others occasion pains, the intensity or continuance of which may prove fatal. Fissures at the margin of the anus, thick and adherent crusts on the face, cracks in the inter-digital spaces, and on the extremities, generally in the neighborhood of the joints, possess this character in the highest degree.

3. Some would exhaust the patient by the abundance of the serous or purulent secretions which they occasion. Ecthyma, pemphigus, immense mucous patches, and extensive impetigo would have this bad effect.

4. A chancre or mucous patches in the mouth exposes the nurse to contracting the infection; and this danger, too well understood by her, compromises the life of the suckling by depriving it entirely or partially of its natural food. It is important, then, to expedite the cure of the transmissible symptom; and local treatment furnishes the best means of accelerating this termination.

5. Lastly, situated on parts where attention to cleanliness is very difficult to renew, some of these lesions produce, by the absorption of the gases or the fluids which their decomposition engenders, a true miasmatic poisoning of the young subject. Such are the very fetid suppuration of syphilitic coryza, the secreting lesions around the anus and on the genitals, and mucous patches of the mouth.

It becomes necessary, therefore, to employ local treatment against the danger resulting from each of these causes, *a fortiori* if several of them combined augment it. The practitioner must decide upon its opportuneness, the results must determine the duration of it. I can only recommend that it should not be prolonged beyond the time required to deprive the lesion of the element of danger produced by itself, independently of that resulting from the diathesis. By the aid of this prudent reservation

the disadvantages of local treatment will be avoided. By depriving each lesion of its individual noxiousness, if we may thus express ourselves, we shall still leave it the means of serving as a useful criterion for the determination of the limits to be put to the general treatment. These preliminary observations having been made, I proceed to point out the local means most suitable for each of the lesions which may call for the employment of this regional treatment.[1]

Nasal fossæ.—Emollient fumigations and lotions should be excluded from the treatment of syphilitic coryza, except in the case of very intense inflammation. Topical applications at once disinfecting and specific may be employed together. A solution of bichloride of mercury may be injected five or six times a day. Calomel or chloride of lime, in powder, should also be blown up the nostrils frequently and alternately. At the same time the formation of the crusts which obstruct them may be prevented by moist aromatic fumigations, and especially by introducing from time to time with a feather a little ointment containing calomel, or proto-iodide of mercury.[2] By the aid of these measures, well combined, we very often obviate fatal effects.

Face.—We must here remedy by local applications: 1. Changes which threaten to leave visible cicatrices or more serious deformities. 2. Those which, covering the face with an immovable mask, impede or render painful the functions performed there. In both cases it is necessary, first of all, to remove the crusts which prevent us from acting directly upon the diseased tissue. But for this region, as for others, the following is the method which I have from experience recognized as most capable of promptly fulfilling this indication, sometimes very important, although only of an accessory character.

Cover the crusts with a thick layer of lard; then place a very warm emollient poultice over them. Keep it there all night. The next morning the lard, gradually melted by the warmth of the poultice, would be found to have penetrated the crust and rendered it soft and less adherent. On removing the poultice, the crust becomes partially detached, and the removal of it may be completed by scraping the surface very gently with a spatula or the handle of a spoon. If one application has not sufficed, two or three similar ones made successively will enable us to remove the most voluminous and most adherent crusts.

When once the diseased tissue has been laid bare, we may act upon it either by repeated cauterizations, if we have to deal with an ulcer, or, if

[1] The treatment of chancre and bubo differs in nothing, in new-born children, from that employed for adults.

[2] To 30 parts of the fatty matter employed, add from 1 to 2 parts of calomel, or from ½ to 1½ part of proto-iodide of mercury.

the integument has not been broken, by dressings with an ointment in which the proportion of proto-iodide of mercury varies from four-fifths of a grain to one grain to fifteen grains of the fatty matter.

Mouth.—The danger of contagion and the obstacle they present to the most important functions call for as rapid a repression as possible of lesions of this cavity. We attain this with certainty by the aid of cauterizations with a pencil of lint smeared with—

Honey.....15 parts.
Sulphuric acid..... 1 to 2 parts.

If a more powerful and more circumscribed action be required, a stick of nitrate of silver furnishes the means of obtaining it. These applications must be repeated every other day. They are the more necessary, as gargles, so useful a substitute for them in adults, cannot be employed in the treatment of children.

Trunk.—An innocent and significant test of the effect produced by the general treatment, the exanthematous or papular eruptions of this region require only to be left to themselves. They formally contra-indicate all local treatment. If, however, pustules of ecthyma or some exceptionally painful lesion should occupy a part of it, we should find in the continued application of a plaster of *vigo cum mercurio* the means both of protecting them from irritating and painful friction and of accelerating their disappearance.

Anus and genital organs.—Almost all the local remedies which may be required for this region are comprised in the treatment of mucous tubercles, so common a lesion that it is almost the only one. But to combat it promptly, nothing equals Ricord's formula, which consists in washing the patches twice a day with a solution of fluid chloride of soda. Each washing is followed by the application, with pressure, of a small quantity of calomel. Care must be taken to increase more and more the degree of concentration of the solution of chloride. I once more suggest the importance of great attention to cleanliness in this region.

Limbs.—Wash the bullæ of pemphigus, or the ulcers which are their consequence, with a pretty strong solution of bichloride of mercury.[1] In the case of onychia, with falling off of the nail, dress the bare surface with a pledget of lint smeared with proto-iodide ointment; place others in the fissured spaces which separate the fingers or the toes; employ mercurial frictions with belladonna[2] on the bony enlargements which may present

[1] Bichloride of mercury, 1½ part to 6 or 7½ parts; distilled water, 100 parts.
[2] Mild mercurial ointment, 25 parts; extract of belladonna, 4 parts.

themselves; these, it appears to me, are the only indications which this region furnishes for local treatment.

Viscera.—I have already pointed out the utility, in these serious cases, of applying the action of the remedy as directly as possible to the organ affected. In induration of the liver, mercurial or iodine frictions in the right hypochondriac or epigastric region should be employed by preference. In the same way, would it not be advisable, in suppuration of the lung, sometimes to try fumigations with cinnabar, or to set free iodine vapor in the apartment inhabited by the little patient? Hesitation is, in my opinion, unjustifiable; and however obscure the diagnosis of this affection may be, its prognosis is so unfavorable that, so soon as we suspect its existence, treatment ought at once to develop all its resources.

[Topical treatment is such an adjuvant in dispelling symptoms and in assisting cure that I do not understand M. Diday's objection to using it. To say that its use by furthering a cure would no longer serve to determine the indications for general treatment is a refinement which I cannot appreciate. The same argument, it seems to me, might be urged against employing a constitutional treatment. The object of treatment is to dispel symptoms, and their disappearance is a guide as to the efficacy of the treatment, and whether this be effected by a constitutional course or by local measures does not matter a particle. I believe that any method which will attain this end should be employed, no matter what that method may be, and the quicker the better.

In blocking up of the nasal passages, a better method than syringing the cavity, an operation which is difficult of performance in the infant, is to take a dossil of the preparation known as Dennison's prepared cotton wet in hot water and cleaning out the crusts which collect in the passages, and after this is effected cleansing, in the same way as before described with a weak solution of carbolic acid the entire nasal cavities, both anterior and posterior. After that is thoroughly done, apply on cotton an ointment of mercury in globules 1 part, vaseline 7 parts, well triturated. This makes a beautiful smooth preparation, and it has the advantage of being perfectly bland and unirritating. These measures should be frequently repeated during the day.

Mucous patches should be first washed with a weak solution of carbolized water, and afterward touched with a five to ten per cent. solution of nitrate of silver. When seated about the genitals or in the fissures of the anus or in the folds of the skin, they should be washed with the carbolized solution and then dusted over with calomel. The main point in the treatment of these lesions, after all, is cleanliness and dryness.

Crusts of the face, unless they impede the child in nursing, or unless from their position about the eyes or lids they seriously interfere with the child's comfort, are better left alone. The surgeon can make no better

dressing, and as he cannot improve upon the *status in quo*, his best plan is to leave well alone. The constitutional treatment effects a cure. If it is found necessary to remove the crusts, then the best way is to poultice them, using vaseline instead of lard, and on their detachment, dressing them with powdered calomel instead of with ointments. Touching the ulcers with the lapis infernalis is necessary only when they show a tendency to become sluggish.

Ulcerations of the trunk or limbs due to pustulo-crustaceous eruptions are better dressed with a mercurial ointment than with any sort of plaster. This latter is only liable to irritate the skin. Better even than the ointment is the use of some dry dressing such as calomel, bismuth, or the like.—F. R. S.]

FORMULÆ.

Plenck's Gummy Mercury.

Mercury	1 gramme (gr. xv.)
Powdered gum arabic	3 grammes (gr. xlv.)
Syrup of diacode (an old preparation, an electuary containing a very small quantity of extract of poppies)	4 grammes (℥ j.)

Triturate in a porcelain mortar until the mercury disappears. *Dose*—2 grammes (℥ ss.) in an appropriate vehicle, or in the form of a bolus or pill.

Van Swieten's Solution.

Hydr. bichlor	1 gramme (gr. xv.)
Sp. vini rect.	100 grammes (℥ iij. ℥ j.)
Aq. destill.	900 grammes (℥ xxviij. ℥ j.)

Neapolitan Ointment.

Ung. hydr. mit.[1]

Bellet's Improved Syrup.

Syrup. simpl.	500 grammes (℥ xv. ℥ v.)
Sp. æther. nitr.	2 grammes (℥ ss.)

With the addition of mercury, if necessary.

Hahnemann's Soluble Mercury.

This preparation, which is insoluble, is an ammoniac-nitrate of mercury. *Dose*—1 to 5 decigram. (gr. $1\frac{1}{2}$ to $7\frac{1}{2}$), in pills.

Laffecteur's Syrup.

Formula not published—chief ingredient sarsaparilla, with a little senna.

Labarraque's Liquid.

Liq. sodæ chlorinat.

Vigo c. Mercurio.

A complex plaster, containing a considerable quantity of mercury.

[1] [In this country, there is no division into unguentum *mite* and *forte*. The only preparation known in the U. S. Pharmacopœia is the Unguentum Hydrargyri. This may be diluted, if necessary.—F. R. S.]

APPENDIX.

BY

F. R. STURGIS, M.D.

I PROPOSE in this appendix to consider two points which have been hastily touched upon by M. Diday: first, the question of the viability of children born with the taint of hereditary syphilis, the mortality which occurs among them, and the causes which produced death; and, secondly, the accidents known under the name of syphilis hereditaria tarda, or late congenital syphilis. Both are interesting problems to study, and much has of late years been added to our knowledge of them.

It has been recognized for a long time that the mortality among syphilitic infants, when the disease has been congenital, is large; that infants born with this taint upon them succumb early in life to the effects of the poison.

Published statistics show a large mortality, and it will be interesting to note, first, the proportion of dead to living children, and, second, the symptoms which these dead children presented.

The first set is taken from the records of births of syphilitic children at the Moscow Hospital, Russia, from 1860 to 1870 inclusive, with deaths from that cause.[1]

Years.	Number of Children.	Deaths.	Percentage.
1860	224	148	66
1861	204	150	75
1862	140	93	67
1863	150	123	82
1864	198	139	70
1865	171	131	70
1866	165	124	70
1867	174	131	69
1868	208	152	73
1869	184	116	63
1870	184	118	65

[1] Gunzburg: Œsterreich. Jahrb. für Pædiatrik, Jahrg. 1872. Bd. ii.

From these statistics it will be seen that the highest percentage reached was eighty-two; the lowest sixty-three. Call it in round numbers a general average of seventy per cent., and the result is even then startling.

The next list is one furnished by the Wiener Med. Halle from the statistics of sixty-one cases occurring in Sigmund's wards, and are collected by Dr. Pick. It gives the duration of the mother's disease, the form of her syphilis, whether she had been treated with or without mercury, and the condition and results of the births. Although in some of the cases of death it is an open question whether the children really succumbed to syphilis, it is hard to avoid the conclusion that they did after all die as the result of their inherited taint, even though indirectly. Thus the cases of pneumonia, diarrhœa, and tabes are probably due to the syphilis, although all three diseases do occur independently of syphilis.

Out of these sixty-one births, fifty-nine die; seveneten are premature births, and forty-four are at full term. Of the seventeen premature births, eleven are born dead; of the forty-four at full term, three. Of the forty-seven living children, four lived more than three months, and in two the result was unknown. Of the remaining forty-one, the mean duration of life was twenty-six days—the shortest period being one hour, the longest ninety days.

Statistics of Sixty-one Births of Syphilitic Children in Sigmund's Ward, Vienna, Austria. Collated by Dr. F. J. Pick, Wiener Med. Halle.

Mothers.					Children.
No.	Age and Social Condition.	Duration of Disease before Confinement.	Form of Disease.	Mercurial Treatment.	Condition and Results.
1..	24 years. Working woman.	4 months.	Papulæ in facie interna femorum. Periostitis in fronte.	With.	Seven months' living child, which died 35 days after birth.
2..	25 years. Domestic.	7 months.	Papulæ circa genitalia.	Without.	Dead girl; macerated; premature.
3..	22 years. Servant.	4 months.	Papulæ et maculæ per totum corpus.	With.	Living girl, full time, which died in 17 days. (Debilitas.)
4..	30 years. Servant.	3 months.	Papulæ ad genitalia.	Without.	Macerated boy, full term. Placenta fatty.
5..	25 years. Servant.	5 months.	Papulæ per totum corpus dispersæ. Angina tonsillaris.	With.	Boy, full time. Died in 3 months. (Tabes.)
6..	25 years. Working woman.	3 months.	Papulæ dispersæ.	Without.	Living girl, full time. Died in 3 days. (Debilitas.)
7..	23 years. Working woman.	2 months.	Papulæ dispersæ.	Without.	Premature birth of dead, macerated boy.
8..	32 years. Charwoman.	3 months.	Papulæ coacervatæ ulcerata in labia et plices femorab.	Without.	Premature living girl with pemphigus. Died one hour after birth. Œdema of placenta.
9..	24 years. Servant.	4 months.	Papulæ ad anum. (Blennorrhœa vaginæ.)	Without.	Living girl, full term. Blennorrhœ occul. utriusque neanotorum. Died 20 days after birth. (Debilitas.)
10..	26 years. Working woman.	3 months.	Ulcera cum basi dura ad genitalia. Maculæ dispersæ.	Without.	Seven months' child, which lived 5 days. Placenta fatty.
11..	23 years. Silk-weaver.	6 weeks.	Papulæ coacervatæ ad anum.	Without.	Living boy, at term. Left the hospital after 3 months.
12..	20 years. Servant.	(?)	Papulæ ad genitalia.	Without.	Living girl, at term. Died 5 days after birth.

Mothers.					Children.
No.	Age and Social Condition.	Duration of Disease before Confinement.	Form of Disease.	Mercurial Treatment.	Condition and Results.
13..	23 years. Working woman.	2 months.	Papulæ circa genitalia.	Without.	Living girl, at term. Died in 17 days.
14..	27 years. Servant.	3 months.	Papulæ circa genitalia.	Without.	Boy, at full term. Adopted.
15..	23 years. Servant.	6 months.	Papulæ confluentes circa anum.	Without.	Living girl, at term, which died in 83 days. (Tabes.)
16..	22 years. Servant.	9 months.	Papulæ obsoletæ in ponæ.	Without.	Living girl, at term. Died 16 days later. (Diarrhœa.)
17..	24 years. Servant.	3 months.	Papulæ ad anum et circa genit.	Without.	Living girl, at term. Died 13 days later. (Diarrhœa.)
18..	22 years. Servant.	3 months.	Maculæ per totum corpus dispersæ.	Without.	Girl, born full term. Died 42 days later. (Pneumonia.)
19..	28 years. Servant.	4 months.	Papulæ circa genitalia.	Without.	Living girl, full term.
20.	16 years. Charwoman.	2 months.	Papulæ ad genitalia.	Without.	Living girl, full term. Died 43 days after.
21..	28 years. Servant.	6 months.	Papulæ per totum corpus dispersæ.	Without.	Boy, full term. Died 12 days after.
22..	20 years. Servant.	6 months.	Maculæ dispersæ. Papulæ ad genit. Pustulæ in collo.	Without.	Boy, full term. Died 20 days after.
23..	23 years. Working woman.	4 months.	Maculæ dispersæ.	Without.	Abortion.
24..	32 years. Charwoman.	5 months.	Papulæ in angulis oris, psoriasis.	Without.	Living girl, full term. Died 40 days after.
25..	24 years. Servant.	4 months.	Maculæ in trunco. Papulæ ad genit. et in tonsillis.	Without.	Premature birth of a macerated girl.
26..	28 years. Servant.	5 months.	Papulæ per totum corpus dispersæ.	Without.	Living girl, at full term.
27..	23 years. Servant.	6 months.	Maculæ dispersæ. Papulæ ad genit.	With.	Dead boy, macerated, at full term. Fatty placenta.
28..	20 years. Servant.	2 months.	Papulæ ad genit. Maculæ dispersæ.	Without.	Living boy, full term. Adopted.
29..	19 years. Working woman.	2 months.	Papulæ ad genitalia.	Without.	Girl, living, but in the last state of emaciation. Lived 1 day.
30..	29 years. Servant.		Maculæ dispersæ.	Without.	Living girl, at full term. Died 22 days after. (Debilitas.)
31..	26 years. Servant.	5 months.	Papulæ per totum cutem dispersæ.	Without.	Living boy. Rhagades ad anum. Died 38 days after.
32..	23 years. Servant.	4 months.	Papulæ ad genitalia.	Without.	Eight months' child, which died in 12 days.
33..	20 years. Working woman.	4 months.	Psoriasis plantaris.	Without.	Premature birth, girl, which died in 1 day.
34..	26 years. Working woman.	2 months.	Papulæ dispersæ.	Without.	Premature birth, dead boy. Torsion of the cord.
35..	23 years. Servant.	3 months.	Maculæ et papulæ per totum corpus dispersæ. (Blennorrhœa vaginæ.)	Without.	Girl, at full term, with blennorrhœa oc. utr. nean. in 11 days. Roseola. Child died in 75 days of Tabes.
36..	22 years. Servant.	5 months.	Papulæ per totum corpus dispersæ.	Without.	Premature birth, at 6 months, of a macerated boy. Placenta œdematous and fatty.
37..	18 years. Servant.	5 months.	Maculæ per totum cutem dispersæ.	Without.	Girl, at full term. Died 30 days after.
38..	20 years. Working woman.	3 months.	Papulæ ad genitalia.	Without.	Abortion at third month.
39..	24 years. Lived with her parents.	8 months.	Maculæ et papulæ dispersæ.	Without.	Boy, at full term. Psoriasis. Died in 2 months. (Tabes.)
40..	29 years. Servant.	2 months.	Maculæ in extremitalibus.	Without.	Boy, at full term. Died 30 days after. (Pneumonia.)
41..	20 years. Charwoman.	7 months.	Papulæ dispersæ.	Without.	Girl, at full term. Died 6 days after.
42..	27 years. Servant.	7 months.	Papulæ dispersæ.	Without.	Seven months' macerated girl.
43..	28 years. Charwoman.	3 months.	Papulæ dispersæ.	Without.	Boy, at full term. Died 24 days after.
44..	18 years. Working woman.	3 months.	Papulæ coacervatæ excoriata circum anum.	Without.	Macerated boy, full term.
45..	28 years. Charwoman.	1 month.	Papulæ ad genitalia.	Without.	Living girl, full term. Adopted.
46..	38 years. Laundress.	2 months.	Papulæ dispersæ.	Without.	Abortion at third month.
47..	34 years. Servant.	4 months.	Maculæ et papulæ per totum cutem.	Without.	Girl, at full term. Died 6 days after.

	Mothers.				Children.
No.	Age and Social Condition.	Duration of Disease before Confinement.	Form of Disease.	Mercurial Treatment.	Condition and Results.
48..	32 years. Char woman.	Could not be determined: last coitus 3 weeks.	Adenitis universalis. Papulæ per totam cutem.	With.	Abortion.
49..	28 years. Servant.	8 months.	Papulæ excoriata circa genitalia.	Without.	Boy, at full term. Marked icterus. Died 2 days after.
50..	24 years. Servant.	5 months.	Papulæ ad genit. et inter digitos.	Without.	Boy, full term. Died 13 days after.
51..	23 years. Servant.	8 weeks.	Maculæ et papulæ per totam cutem.	Without.	Girl, full term. Died 30 days after.
52..	22 years. Servant.	7 months.	Papulæ dispersæ.	Without.	Boy, full term. Died 24 days after.
53..	21 years. Servant.	5 months.	Ulcera in labiis majoribus. Papulæ.	Without.	Boy, at full term. After 14 days maculæ appeared. Died 46 days after.
54..	21 years. Cook.	5 months.	Papulæ excoriata in genitalibus et inter digitos, psoriasis plantaris subsequa.	Without.	Boy, at full term. Died 7 days after.
55..	30 years. Servant.	3 months.	Papulæ dispersæ in tonsillis et in palato molli.	Without.	Girl, at full term. Died 90 days after.
56..	32 years. Charwoman.	6 months.	Maculæ et papulæ dispersæ. Psoriasis plantaris. Iritis specifica.	With.	Abortion at sixth month.
57..	34 years. Laundress.	1 month.	Papulæ in portione vaginale.	Without.	Girl, at full term. Died 15 days after. (Pneumonia.)
58..	28 years. Servant.	5 months.	Papulæ per totam cutem dispersæ.	With.	Boy, at full term. Died 10 days after. (Iles-typhus.)
59..	30 years. Charwoman.	2 months.	Papulæ ad genitalia.	Without.	Boy, at full term. Died 23 days after.
60..	25 years. Working woman.	6 months.	Papulæ per totam cutem dispersæ.	Without.	Premature live birth. Died 4 days after.
61..	23 years. Charwoman.	8 months.	Papulæ confluentes circum anum et in labiis pudendis. Psoriasis.	Without.	Boy, full term. Died 14 days after.

As regards the symptoms of late inherited syphilis, there is a wide diversity of opinion touching the possibility of their occurring in persons who were children of parents infected with syphilis, but who have themselves shown no symptoms of the disease during the early years of their infancy. Without doubt a very large proportion of children born of syphilitic parents show the disease during the first year of their extra-uterine life, and it was believed that if that period was passed, then the probability of their showing any subsequent lesions were slight indeed. Some went so far as to say that none would manifest themselves. Subsequent observation has caused us to suspend final judgment upon this point; and while not denying absolutely the improbability of an attack of hereditary syphilis occurring several years after birth, without some symptoms appearing in between; at least admitting that possibly the treatment of the parents may have delayed the manifestations in the children beyond the usual limits assigned them, precisely as we see happening in cases of acquired disease, I myself incline to the belief that very frequently the symptoms escape observation during the infant's earlier years, particularly if the manifestations

are light, and this is not only a probable thing, but one which happens every day; or else, if the child does show any lesions, their true character is overlooked, and they are ascribed to other causes than the right one. Hence many cases of early syphilis escape attention, and when the child subsequently breaks out with the symptoms of its inherited disease at the period of puberty or later on, it is considered, perhaps reported, as a case of late inherited syphilis, without any symptoms occurring during early life—in other words, as a retarded syphilis. I do not myself believe in a syphilis lying dormant for ten, fifteen, or twenty years without it showing some signs of its presence; and where such is stated to have been the case, I suspect that the fault is in the observer and not in the disease.

The symptoms which manifest themselves at the later periods of the child's life are those which belong to the group of the so-called tertiary stage, and are prone to show themselves as deep ulcerations of the skin and sub-cellular tissue, ulcerations of the cavity of the mouth and throat, and necrosis of the bones. Many of these symptoms have been described in the older writers as scrofulous; a term which has been made to cover a vast amount of medical ignorance, like many terms now in use. As our knowledge advanced many of these "scrofulous" symptoms have been referred to their proper origin, and foremost among these inherited syphilis plays a not unimportant part. Whether syphilis can produce scrofula or not has been for a long time a point of discussion among medical men, nor is it yet settled, as many believe that syphilis is capable of producing a vitiated condition of the system which is favorable to the development of the train of symptoms which are described under the term "scrofula." I myself am inclined to differ from this view, and to believe that inherited syphilis can be cured, and once cured, to leave no symptoms behind it such as could be laid to the door of "scrofula," whatever that elastic term may mean.

Can hereditary syphilis manifest itself in the second generation? Some authors contend it can, and M. Davasse has published a case in support of this theory.

It is recorded in his work, "La syphilis, sa formes, son unité, etc.," and is inserted here on account of its interest.

"Hereditary syphilis attacking the descendants of the second generation. Multiple affections of a rachitic and scrofulous nature; caries of the knees, of the bones of the nose, etc.

"Six years ago, while on a hunting excursion to the chateau of ——, near Paris, I visited the daughter of a keeper, sixteen years of age, who was afflicted, since the period of second dentition, with such severe symptoms as to be confined to her bed.

"Born of a father and mother of an excellent constitution, both of them presenting the picture of perfect health, this young girl was the only living child of their family. Six other children had died at or shortly after

birth from debility, convulsions, or from some unknown cause. This last one had alone survived. Her early infancy presented nothing particularly worthy of mention. But at the age of seven, very acute pains manifested themselves in the neighborhood of the knee-joints, followed by the formation of an abscess. The disease extended slowly until the whole articulation was invaded, and several sequestra of dead bone were thrown off. The disease was regarded as a white swelling, and was treated by frictions, poultices, leeches, blisters, cautery—in short, by all the depurative methods in use for the treatment of scrofula. This had been continued without success for nine years.

"At my first visit, the two peri-articular surfaces of the knees presented large, livid ulcerations, fungoid and irregular in shape, at the bottom of which were blackened and jagged osseous prominences bathed in a fetid pus. The pain, which was very acute, was not confined to the diseased portions; it was present for the most part throughout the long bones of the legs, the thighs, and the arms; so constant and exacerbating as to deprive the patient of sleep and rest. All these bones, with scarcely an exception, presented at their extremities a diffuse swelling, and their diaphyses were all more or less curved, the arms were doubly curved in an inverse ratio to their length. The vertebral column and the thorax were the seat of rachitic deformity. The feet, strongly retracted and turned outward, could not be placed flat upon the ground: the metatarsal bones had a singular prolongation, by which the great toes were bent over and terminated in a pointed extremity. The skin, especially of these parts, was of a dirty bistre color, covered with crusts. The general appearance of the lower extremities was peculiarly hideous. This peculiar tint of the skin was found elsewhere over the rest of the body, though to a less degree. She was very much emaciated. At this time, the parents, seeing the steady ill-success of the ordinary methods of treatment, had called in Dr. Léon Simon, Jr.

"I had occasion to see this poor girl, at long intervals, during several years, and to note, to my great surprise, a very decided progressive amelioration in her symptoms. The ulcerations of the knees cicatrized, the emaciation diminished, the appearance was more animated; the breasts became developed, and her menstruation was established.

"I learned from my confrère, M. Léon Simon, that the mother of this patient frequently went to Paris for medical consultation. Notwithstanding the general pain in the limbs, increased on pressure of the bones and becoming worse at night, the continuance of the suppuration, the chronic course of the various symptoms, and the absence of all the characteristics of scrofula, gave me doubts about the character of the disease.

"Twenty months later, the pains were concentrated about the nasal fossæ. The root of the nose became swollen and puffy, an erysipelas attacked the face and scalp, and the solid framework of the nose immediately disappeared. For several months fragments of bone and cartilage were

cast off, accompanied with a most fetid discharge. In consequence of this attack, the other symptoms became aggravated, the caries of the bones began afresh, the ulcerations became larger, and the hectic condition was aggravated.

"This lesion of the nose, which had appeared during one of my few visits, together with a peculiar disposition of the teeth, especially of the incisors, strengthened still further my doubts as to the nature of the disease, when I one day met the grandmother of the patient at the latter's bedside. I was struck by the nasal intonation of her voice, and requested to examine her throat. Never were tertiary lesions more characteristic: the palate, both hard and soft, as well as the pillars of the fauces, were entirely destroyed; the nasal and buccal cavities communicated, and there were cicatrices on the pharyngeal walls, etc., etc. This is what I learned: This woman, at present a widow, was taken ill shortly after her marriage, but she was entirely ignorant of the nature and origin of her illness. There had been some lesions on the skin, and she had suffered with violent pains, which had persisted for a long time and ended in the destruction of her palate. She had been treated for many years with various medicaments, such as pills, tisanes, and a solution which appeared to have been the liqueur de Van Swieten. The doctor who had attended her at that time was dead. Cured at last, she has had no further symptoms. She gave birth to three children, who have always been healthy. Her eldest daughter, the mother of our patient, had never had any serious illness; but, as I have already mentioned, her first six children all died shortly after birth. The condition of the seventh child, since her fifteenth year, we know.

"The family antecedents, especially on the side of our patient, the character of the lesions of the knees, the osseous degenerations, the discoloration of the skin, the multiplicity of the osteocopic pains, the caries of the nasal fossæ, and the disposition of the incisor teeth, leave no doubt in my mind as to the syphilitic nature and hereditary origin of these lesions.

"I hastened to impart this information to M. Léon Simon, who, after having examined the old woman, gave me his opinion, which I am glad to produce in a case which requires such careful supervision. 'I examined,' he writes, 'the throat of the grandmother of the patient, and I was astounded at the extent of the destruction which I found. I am satisfied that there is a hereditary taint descended from the grandmother to the grandchild. And I agree with you in thinking that no other virus, except that of syphilis, could produce such lesions of the palate and throat.'"

Admitting that the lesions described by M. Davasse as existing in these two persons were syphilitic, the history loses all its value as proof in consequence of his silence as to the mother's history. She is not seen, nobody knows that she has ever had syphilis, it is merely surmised from the symptoms in her daughter, and supposing she did have or had had syphilis,

what evidence is there to show that it was of the hereditary type and not acquired? None whatever. Until these points are cleared up this case cannot, of course, be brought forward as evidence of the transmissibility of inherited syphilis from parent to child. It is quoted here to be read conjointly with the cases which follow, and which are not wanting in these details, rendering such a transmission as among the possibilities.

Mr. Hutchinson, in the "Clinical Lectures and Reports of the London Hospital," gives the histories of three cases which he apparently believes to be cases of hereditary syphilitic transmission to the second generation. They are defective in many important details, and in some of them I think it may fairly be questioned if the point of the transmission is proved.

The first case is one in which the mother "had a very syphilitic physiognomy. Her corneæ were clouded by by-gone keratitis. The bridge of her nose was sunken, and her complexion was pale and earthy. I asked her to show her teeth, and they proved to be most typically malformed. She was a tall woman of dark complexion. She told me she had but the one child above mentioned, and that she had never had any others, nor had she had any miscarriages. She reported that her child, excepting as to her knee, had never been ill. The child, a girl five years old, was of dark complexion and well formed features; she was florid and rather handsome. Her ailment was chronic synovitis of the left knee-joint—the knee being rather swollen, but not specially painful. She had no other diseases. Her eyes were perfect, as also her hearing."

This is manifestly a case where there is no evidence to show that the child ever had syphilis, certainly the synovitis could not properly be called so, and hence this case must be excluded as proving anything one way or the other. The mother very probably did have at some time of her life inherited disease of a syphilitic character.

The second case is of no scientific value, because the children of the man who was reputed to have been the subject of inherited syphilis were not seen, and the history which the father gave of them did not show that they had ever suffered from syphilis.

The third case, although fuller as to details, is yet not convincing. I give it *in extenso*:

"Mrs. W—— came under my treatment for syphilitic keratitis. She was a florid young woman, aged twenty-one, who had been married one year, and was now nursing her first child. Although her aspect was florid, and she looked fairly healthy, yet she presented, in addition to the keratitis, unmistakable evidences of inherited taint. Her teeth were notched, there were scars at the angles of the mouth, and her forehead was protuberant.

"I inquired as to the health of her infant, and was assured it was perfect. At my request she brought it with her at her next visit, and I found it plump and well grown; but its nostrils were obstructed, and its buttocks were covered with copper-tinted scaly patches of an unmistakable

character. These symptoms disappeared subsequently, under mercurial treatment, and the child is now living and well."

Mr. Hutchinson then goes on to say: "Here then we appear to have an instance of a mother who is the subject of inherited syphilis transmitting a taint to her offspring, and that offspring showing the usual conditions of infantile disease. No such fact has, I believe, been as yet recorded in the annals of medicine, and it ought to be received with incredulity. Might not the taint from which the child suffered be the consequence of acquired disease in one of the parents? As regards the mother, I believe such a suggestion highly improbable. She appeared to be a modest, well-conducted person; she was quite young and respectably married; she had, besides, no symptoms of acquired disease, and as being the subject of inherited taint she must be supposed in some degree to be protected from contagion, even had she been exposed.

"As regards her husband, I made the most careful investigation. He was a commercial traveller, and was under my care on account of sycosis. He had previously been under the treatment of Mr. Erasmus Wilson and Mr. Startin, neither of whom had suggested that his eruption was syphilitic. Excepting the eruption, which was sycosis of the most characteristic form, he was free from symptoms. He gave me an apparently candid account of his sexual conduct prior to marriage, and assured me most positively that he had never had any form of venereal disease. He was most anxious to be cured of his sycosis, and would, I think, have confessed anything which he thought likely to assist in his treatment. He was a florid, healthy looking man. I treated his sycosis with syphilitic remedies for some time, but they did it no good whatever."

Another case of the kind has been reported by Dr. I. E. Atkinson of Baltimore, and is published in the *Archives of Dermatology* for January, 1877.

"Julia H——, born in America, of Irish parents, aged nineteen years, married, came to the special dispensary, February 1, 1876, to be treated for an eruption upon both arms and forearms, which had appeared four months previously, when she was more than three months advanced in her second pregnancy. She is well developed, of fair complexion, blue eyes, and light hair. Her skin is moderately soft and smooth, her forehead is somewhat squared and prominent, and there is a slight flatness across the bridge of her nose—hardly enough, however, to attract attention, were it not for concomitant circumstances and conditions. The upper central incisor teeth are shallowly but very positively notched in the style peculiar to subjects of inherited syphilis, they are somewhat undersized, and not in contact with each other. Her eyes present a hazy, foggy condition of the corneæ, the remains of a syphilitic keratitis, which, according to the statement of her mother, must have occurred about seven years ago, when 'her eyes were affected for a long time, and she was almost blind.' She was

treated 'by an oculist, who cut the corners of her eyes.' There are no linear cicatrices, such as are so frequently seen about the mouths of persons congenitally syphilitic, nor are there any scars suggestive of ulcerative lesions about her person. She has been married three years, and has a child eighteen months old. About one year ago she brought this child to the dispensary with an eczematous eruption about its anus, which disappeared under the application of the benzoated oxide of zinc ointment. It has never undergone any specific treatment, and is at present a healthy, vigorous child. Some time after the birth of this child, the mother was under treatment at the dispensary for a crescent-shaped, papulo-squamous eruption upon the thigh, which was considered by my colleague, Dr. N. G. Keirle, who attended her, to be syphilitic. Dr. Keirle at the same time recognized her inherited taint, to which he attributed her eruption. No trace of this eruption remains.

"February 1st. The present eruption consists of four or five patches on each arm; they are circinate, their centres being of perfectly healthy appearance; they are composed of quite large papules with slightly scaly summits; they vary from one-half to one and a half mm. in diameter, the papules being rather smaller than peas. These patches are arranged for the most part upon the extensor surfaces of the forearms, a few being upon the arms; they occasion no itching nor unpleasant subjective symptoms, and are colored in the usual manner of syphilitic eruptions. The patient denies having had any sores upon or about her genitals, and her inguinal glands are of perfectly normal appearance. Her husband, whom I have examined, denies ever having had syphilis or any venereal complaint. He is of slender frame and complains of being very nervous. He presents no symptom of syphilis at the present time.

"The evidences of inherited syphilis in this patient receive ample support from the history of her family. Her father denies ever having had syphilis. He has some opacity of the corneæ, which he attributes to an attack of violent inflammation several years ago, following a prolonged debauch. The mother of our patient has numerous cicatrices on her face, particularly about her forehead, which are very suggestive of old syphilitic disease. Of her offspring, four died in infancy; the first, in spasms, when one year old; the second, in spasms also, when two weeks old; the third and fourth, each at the age of fifteen months; the fifth child is our present patient; the sixth child, a girl, Honora, now eighteen years old, is tall and stout, much resembling her sister in appearance. She has a decided syphilitic notching of her right upper incisor, and her corneæ are more hazy than those of her sister, for, while the cloudiness in the corneæ of the latter diminishes toward the centre, in this girl's eyes it seems to be evenly distributed over the whole surface. Four years ago Honora became suddenly deaf, and was brought to the dispensary for treatment. She slowly recovered under specific treatment, and at the end of six months was quite

well again. Two and a half years ago she again became suddenly deaf, and has remained so ever since, hearing only very loud noises. She was treated by my friend, Dr. Samuel Theobald, who has kindly furnished me the following extracts from his notes: 'Almost total loss of hearing, of six weeks' duration, from otitis media (acute), due to inherited syphilis. Present condition: Left ear, membrane perforated and otorrhœa present. Right ear, membrana tympani thickened, vascular, and much depressed. She has nebulous corneæ and history of severe inflammation of the eye. (Her father's eyes are in the same condition.) Eustachian tubes pervious to Politzer's bag, but no improvement to hearing from it.' Dr. Theobald thus thinks that the lesions in the father's eyes are the result of interstitial keratitis likewise.

"April 1st. Three weeks ago, Julia, the subject of this report, was delivered at term of a male child, which is now of fair size and healthy looking. She has had much headache since her confinement. The eruption on her arms has faded, the coppery staining having entirely disappeared. The patches, however, still remain, consisting of slightly prominent large papules, not at all scaly, and hardly differing from the surrounding surface in color; to the touch they are soft, and as if all inflammatory infiltration had disappeared. She has as yet taken nothing but a tonic mixture, and thrice daily four minims of Fowler's solution of arsenic, syphilitic treatment being purposely withheld.

"June 27th. The eruption on the mother's arms presents the following appearance, viz.: The oldest patches now have nothing remaining, except their markings, arranged in a circinate form, unelevated and undepressed, whiter than the healthy skin, but not differing from it in resistance. New patches, however, have appeared; the older of these, having lost the copper color originally possessed by them, persist as large papules, without desquamation and without differing from the normal integument: those patches of more recent date precisely resemble those first described, in their syphilitic coloration, configuration, etc. The woman's general health is now good, and the only evidence of increased intensity of the morbid process is the augmented number of patches, which have now invaded the thighs and legs. She bears upon her person no other evidence of syphilis.

"For the first time she begins to take the iodide of potassium in five-grain doses, thrice daily, mercury being purposely withheld.

"By July 28th the papules had all disappeared, leaving in their places the numerous circles of white spots already described. Not a single patch appeared after the iodide of potassium was ordered.

"Toward the end of April, when the baby was about six weeks old, its mother first noticed that it had a very feeble voice in crying, and that it was without vigor. It was brought to me May 18th, suffering from coryza, which it was said to have had for some time. Scattered over its head, trunk, and extremities were many small spots of roseola, which its mother

described as having been more red than at present; they were now of the peculiar copper color of syphilitic eruptions. There existed at the same time numerous minute excoriations about the anus and buttocks, resembling, however, not so much mucous patches as the ordinary condition of an aggravated erythema produced by prolonged contact with urine and fæces. The child appeared to be tolerably well; and as there were no immediately alarming symptoms, syphilitic treatment was avoided, benzoated oxide of zinc ointment being applied to the buttocks.

"June 27th. The child has fallen off much in flesh, and has quite a withered and senile look. He cries feebly almost continually; about three weeks ago he began to roll his head about upon the pillow, and at the same time fresh spots came upon his skin. The erythematous and excoriated condition of his buttocks persists, while upon the scrotum it amounts to an eczema, red, raw, and exuding. There is diarrhœa.

"The roseolous patches are scattered all over the integument; they are generally small, but sometimes coalesce into large patches; they are dry and almost without desquamation; about the buttocks, beyond the limits of the old erythematous surface, they are wrinkled. Their general color is a characteristic ham or copper color, differing from the common non-specific erythematous eruptions of infants. The palms of the hands and soles of the feet are reddened, dry, and wrinkled, not scaly. There is some coryza, but the child does not snuffle, nor are there any fissures or cracks about the nostrils. The corners of the mouth, however, are slightly fissured. The peculiar muddy or yellow-clay color of the face, and especially of the eyebrows, is very characteristic. The benzoated ointment of oxide of zinc is to be applied to the buttocks and scrotum, and a flannel band, smeared with equal parts of the above ointment and mercurial ointment, is to be wrapped around the body, newly applied every night.

"By July 8th the eruption is noted as fading, the epidermis of palms and soles is peeling, and the baby is described as much better.

"July 28th. The bandage has not been applied for about ten days, owing to the intensely hot, warm weather: the roseola is gone, leaving a faint staining, and the child is very much better.

"August 28th. The child has had an obstinate diarrhœa, which has reduced it very much; there are no other symptoms than an almost entire voicelessness, the mouth in crying being widely opened, while there is scarcely any audible sound given forth. The infant was not again brought to me, nor was it again under medical treatment. It died October 7th. It had taken no medicine for weeks, I was informed by its mother, and had had a persistent diarrhœa, and toward the last 'inward spasms' and rolling of the head."

These, so far as I know, are all the cases in which syphilis has been reported to have been transmitted to the second generation; that is, to the children of the person who was the subject of the inherited disease with-

out an acquired syphilis coming in between, and the reader can see for himself how unsatisfactory the proof is. Perhaps by and by other cases will be reported which will prove this very interesting point, but at present we must suspend judgment; all that can be said is that this has not yet been proved, although there is evidence which renders it possible of occurrence.

Can the subject of hereditary syphilis acquire syphilis later in life? is a question which is interesting, and has been by some surgeons answered in the affirmative. Mr. Hutchinson, in the work already quoted, has given the histories of some cases which he thinks prove this point, but which I leave to the consideration of the reader to decide for himself. There is only one which is worth anything in a scientific light. It is this:

"The following case affords proof that a patient who, in infancy, has suffered from inherited syphilis may in adult life contract a primary sore, and have it followed by constitutional symptoms—rash sore throat, and iritis. We may note, however, that although it is quite certain, from his mother's statement, that both his parents had been the subjects of syphilis, and that he himself in infancy suffered from rash, yet that his symptoms had on the whole been light. He was not born till six or eight years after the date of disease in his parents, and neither his physiognomy nor his teeth showed the peculiarities which are usually seen in those whose infantile symptoms have been severe. I did not at first recognize him as one of this class, and it was only when his corneæ passed into an unmistakable condition of interstitial inflammation that my suspicions became aroused.

"Let us also note, as a very interesting point, that this attack of interstitial keratitis occurred about ten months after the outbreak of acquired disease, although we must bear in mind that there was a history of inflammation in one eye several years before. Now I have never once seen interstitial keratitis as a sequel to acquired disease; it occurs solely in the subjects of inherited taint. In this case we might suspect that the eye disease was modified by the two sources of contamination, or that the hereditary taint was roused into activity by the acquired one. There was iritis as well as keratitis present.

"E. H. M——, aged twenty-one, was admitted under my care at the Moorfields Ophthalmic Hospital on July 6, 1863. His right cornea was inflamed, and he stated that it had followed an injury from lime a fortnight before. The cornea was diffusely opaque, and the eye was very irritable. I prescribed, at first, tonics internally and opiate fomentations, being misled by his statement that he had had lime in it. On the 20th I recognized iritis in slight degree, and the dotted condition of the cornea, taken with the slight inflammation of the iris, presented a condition similar to what used to be called aquo-capsulitis. Iodide of potassium was now prescribed. In the middle of August the left cornea began to inflame. At this time the right cornea was so opaque that it was impossible to inspect the iris, and

it presented exactly the condition of syphilitic keratitis. His physiognomy did not suggest hereditary syphilis. It is true his skin was pale and of bad color, but his nose was narrow with a very high bridge, and his teeth were perfect in form, size, and color. In making inquiries into his history, he mentioned that his mother had suffered in her eyes, and, thinking that some light might perhaps be obtained in respect to his own diathesis, I requested that she should attend.

"His mother's history.—On August 27th Mrs. M. attended with her son, and brought with her one of Mr. Bowman's out-patient letters. From notes on the letter I found that iridectomy for synechiæ and relapsing iritis had been performed six years ago. She had obtained great benefit from the operation. There were still bands of synechiæ in the lower part of the pupil. The original attack of iritis had occurred twenty-five years ago. On being taken aside, Mrs. M. told me without reserve the whole history of her troubles. Her husband had been a most dissolute man, had frequently suffered from venereal diseases himself, and had communicated sores to his wife several times. Her worst attack was when the iritis occurred, at which time she had a very free rash. Several of her children had died of 'the disease.' Our patient was one of her younger children, and was born six or seven years subsequent to his parent's contamination. The three infants preceding him had all died. In infancy he suffered from a rash, and was treated by Dr. Reese, who referred it to venereal taint. After infancy he had fair health, until about the age of fifteen, when his left eye inflamed.

"Acquired disease.—He was under my care for gonorrhœa four years ago, and since that has been much exposed. A year ago he appears to have had true syphilis. He does not recollect a true chancre, but he had a copious scaly rash and a bad sore throat. These lasted for three months or more. The surgeon whom he attended told him it was syphilis, and gave him mercury to salivation. Although he did not recognize the chancre, I think there can be little doubt that he had one. His description of the rash is very minute, and numerous spots occurred on the penis and scrotum, so that it is very possible that he may have mistaken the original one. Since he was well he has had a sore and also gonorrhœa.

"February 20, 1865.—He has remained steadily under treatment by iodides, etc. The corneæ have gradually cleared; with the left eye he reads minion, with right only words of

No. Fourteen.

"In both eyes clouds still remain in the corneæ, and in both the ciliary regions look thin and bluish. He has still a little psoriasis about the lips and chin, and a few patches on the body. In other respects he is in good health. There are no iritic adhesions."

This is certainly a pretty distinct history and gives in detail a presumable history of syphilis in the mother together with one in the child. Moreover the boy himself, when he reaches years of discretion contracts syphilis on his own account, and presents unmistakable symptoms of that disease. There is little to criticise in the case on the ground of lack in detail, as in the minor points which are wanting there could be no human possibility of obtaining absolute knowledge, unless the reporter had seen the boy during his infancy and followed the case up from that time on. Indeed, the minutiæ of the case are unusually well worked up.

If in these cases we follow analogy, comparing the course pursued in acquired syphilis, in cases of reinfection and these histories here detailed, there is nothing which is not perfectly possible nor which cannot be accepted as likely of occurrence in the cases just given. In acquired syphilis it is not believed that a second infection occurs while the first diathesis is still present, but as soon as that has disappeared, a second infection is possible, and so many well attested cases exist in medical literature as to show that such a possibility does occur. Why not the same thing in hereditary syphilis? While the diathesis exists, there is no reason for supposing that a reinfection can exist, but when from any cause this diathesis ceases to be operative, then the person becomes again liable, and upon exposure may contract the disease again.

There is nothing in the case of Mr. Hutchinson to militate against this view. The subject under treatment receives an injury to the eye which excites a keratitis, at first diffuse, but which subsequently shows a dotted condition such as is found in these cases, but which did not come on at that time. The probabilities are that it happened during the young man's infancy, and that it was masked by the acute inflammation which followed the injury. In addition, an iritis declared itself, but nothing else which could be referable to the inherited taint. The mother's history is clear, and points without reasonable doubt to syphilis in her, thus strengthening the suspicion produced by the son's eyes. He then contracted syphilis, and although he did not recognize the initial lesion, and was thus led to deny its existence, there is no doubt of its existence. But it may be urged that his statement about the chancre was true, that this was not a case of acquired, but of hereditary syphilis. What can be opposed to this view of the case? This: the symptoms which appeared were a scaly rash and a sore throat. Now, had this outbreak been one of hereditary syphilis, the symptoms coming on at this age would have been of the advanced, the ulcerative type, and not of the character here described. To my mind there is not the least ground for questioning the correctness of the view that this eruption belonged to an acquired syphilis, and I furthermore think that this man had previously suffered from the hereditary disease as well.

At what time are the cases of late hereditary syphilis usually seen? Is it possible to have cases of inherited disease break out for the first time years

after birth, without any premonitory symptoms having occurred during the early years of infantile life? Much difference of opinion exists upon this point. Ricord believed that hereditary syphilis might remain latent for many years before showing any manifestations and that the first outbreak might occur at the age of puberty, or even later. Carrère, quoted by Augagneur ("Étude sur la Syphilis héréditaire tardive") gives the following opinion: "When the hereditary taint is active the symptoms are sometimes developed early and commit ravages during the first few years after birth; sometimes, however, it does not show itself until the age of puberty, and again it may not show itself before the ages of thirty-five, forty, and forty-five years." Thus it will be seen that a large latitude is allowed the disease to make its appearance, a latitude so great as to suggest doubts as to the correctness of the views entertained, and to permit the question to be raised, whether the observations upon which such statements are based have been well made. That symptoms of hereditary syphilis do present themselves at any period of life, from early childhood (four years) to advanced old age (sixty-five years), I will readily admit; but the point at issue is whether these are the first to make their appearance; have there been no symptoms in between? It is a difficult question to answer, but I believe that in those cases where this condition of things is reported to have existed, the earlier symptoms have been mild in their character, and have thus been overlooked. I do not think that it has yet been conclusively proved that these manifestations of late syphilis are the first in the list, and until further investigations have been made, judgment on this point must be suspended.

Three epochs of human life seem to be favorable to the explosion, if I may be allowed the word, of symptoms of inherited syphilis: viz., birth, puberty, and the period which marks the advent of old age, in men between the ages of fifty and sixty years, in women at the change of life. I do not mean to say that they may not occur at other ages than these, but that of the periods of life these are the ones most likely to exhibit the manifestations of the disease. Of the three, puberty is the most to be dreaded, as at this time a large percentage of the cases of late hereditary syphilis occur.

Symptoms.—The symptoms which are present at this period are usually those of the late stage, and attack all portions of the body, indeed many are of such varied form as to cause their origin to be laid to other diseases than syphilis. Many of them, notably such as produce ulcerations of the palate, the nose, and ulcerating lesions of the skin, have in many instances been regarded and described as scrofula. Ricord gave these lesions the fanciful name of "scrofulate de vérole," the scrofulate of pox; Maisonneuve and Montanier "scrofuloïdes." But it is not necessary to call them scrofulates or scrofuloids; call them by their proper name of pox. Recognized as such, Sir Astley Cooper's remark that he had cured

many cases of scrofula, attended with destructive ulceration of the soft parts of the throat, and with ulcerations of the integuments with small doses of the bichloride of mercury in sarsaparilla is readily understood; he was dealing with cases of late inherited syphilis, only that in his day the relations of the two diseases were not clearly understood and all such lesions were grouped together under the convenient name of scrofula. Omne ignotum in medicinâ pro scrofulâ might be fairly given as the definition of scrofula in those days, perhaps even in our own.

Let us first study the syphilides of the skin. Their principal seat is the face, although the lesions are by no means confined to this portion. They are often confounded with lupus, as they frequently present the serpiginous character of this disease, and sometimes show a tendency to extend in one direction while healing in another. But the edges of the ulceration, the appearance of the sore itself, and the history, together with the concomitant symptoms furnished by the teeth, the eyes, the nose, and angles of the mouth, which are often found with these ulcerations of the integument, serve to warn the surgeon of their real nature.

These lesions usually commence as tubercles of the subcutaneous tissue, or else as gummous infiltrations, sometimes diffuse, sometimes circumscribed. I recall one case of a youth of sixteen, in whom a large diffused swelling of the thigh occurred, which was painless, slow of growth, and which was more inconvenient from the impediment which it offered to walking than anything else, where the diagnosis of gummous infiltration of the thigh, of hereditary origin, was made, and which disappeared under the use of the iodide of potassium. In his case there were the remains of an interstitial keratitis, and Hutchinson's "screw-driver teeth." No history of the parents was obtained, so of course the history is not absolutely perfect, but enough was evident in the symptoms to make the diagnosis a correct one, outside of any history, either of himself or his parents.

These tubercles or gummous infiltrations are generally slow in their progress, unless there be some intercurrent affection or some condition of the body to render it active, when the disease may progress with extreme rapidity; but this condition of things is comparatively rare, and the disease, as already stated, is slow in its course. After a longer or shorter time, according to circumstances, one or more points of softening occur in the swelling, this softening being unattended with any of the ordinary signs of inflammation. Little by little this thinning of the tissues goes on until one or more openings are established, depending on whether there are one or several points of softening. Upon breaking, these gummata give issue to a certain amount of thin, unhealthy pus and the characteristic gummy matter. The next step in the process is the breaking down of tissue in the neighborhood, either by the formation of fresh points of softening and suppuration, or else by an extension of the ulceration, Mixed with this matter is the débris of broken-down tissue, cellular and muscular. The

resulting ulcer is deep and excavated, with undermined edges and an irregular floor. It may assume a circular shape or it may be irregular, due to the coalescence of several tubercles which were originally grouped together; sometimes it assumes a serpiginous course, proving very obstinate to treatment and hard to heal, breaking down repeatedly just as it seems to be upon the point of final cicatrization.

During this period the earlier manifestations of the syphilides do not appear, the lesions all being of the late stages and not of the early. This is an important point to bear in mind, as it will often enable the surgeon to distinguish between the lesions due to inherited and those due to an acquired case of syphilis.

The mucous membranes, notably of the throat, nasal cavities, and mouth, are the seat of manifestations of late hereditary syphilis. Commencing usually as a gummous infiltration of the soft parts, this infiltration rapidly breaks down and leaves behind it a large ulceration, which often leads to severe deformity and loss of tissue. But even in these cases, so unpromising in their appearance, it is surprising to see the improvement which takes place as soon as a proper treatment is instituted. The following case, taken from the pamphlet of M. Augagneur, illustrates so many of the points in this type of the disease, and the concomitant symptoms which accompany it are so corroborative of the syphilitic diathesis underlying the manifestations that I give it here in full.

"Case III. (communicated by M. Aubert).—Henriette R——, six years of age, living at Lyons, entered the Antiquaille Hospital October 17, 1878.

"The father of this patient, fifty years of age, enjoys excellent health. Her mother, forty years old, contracted syphilis, twelve years before, from a nursling. From the first appearance of the initial lesion she was subjected to a specific treatment, and has shown as manifestations of the secondary period only alopecia and frequent sore throats. There has been no eruption of the skin. Before and after her attack of syphilis she had had ten children, five boys and five girls. Of the boys four are dead; two succumbed to variola at the ages of six and eight years; two others died of bronchitis, one at twelve months, the other at birth; and the fifth, aged fourteen years, has enjoyed very good health.

"Of the five girls three are still living; two, aged eighteen and twenty years, are in good health. The third is our patient. The last two died, one at four months, the other at birth, from some unknown affection.

"This latter was born one year after the appearance of the initial lesion in the mother.

"The patient entered the hospital for an ulcerating gumma of the soft palate of three weeks' duration. Previously to this the patient had presented crusts in the hair, obstinate ophthalmia, and headaches. Antecedent to these lesions she had had jaundice, and at various times attacks

of paresis, accompanied with violent pains in the limbs. These symptoms had lasted for a year. The right arm was the last limb which was attacked.

"For two years she has lived in an unhealthy dwelling which opened out on a court. She has always had a sufficiency of food. Treatment has hitherto consisted in the employment of infusions of walnut leaves, and the syrup of Portal,[1] and gargles of blackberry leaves.

"On examination, there was found on a level with the movable portion of the soft palate, on the median line, an ovoid ulceration, with its long axis in the antero-posterior direction, having a length of two centimetres, and four or five millimetres in breadth. The borders of the ulceration were covered with fungous granulations, and presented a slight degree of inflammation. The lesion did not produce any disturbances in deglutition, respiration, or phonation.

"The ganglia of the neck were the seat of a slight degree of hypertrophy. The general health of the patient was fairly good; the face was anæmic.

"The treatment instituted was by the iodide of potassium. The ingestion of the drug was proved by the examination of the urine. From the 17th to the 29th of October the doses were gradually increased from 2 to 6 grammes (30 to 90 grains) per diem. On November 12th, 4 grammes (60 grains) were given, and on December 14th this was further cut down to 2 (30 grains) as the daily dose.

"The action of the drug was very rapid. On January 10th only a small fistulous opening was left. On the 17th the patient left the hospital, having no other symptoms beyond some opacities of the cornea."

In this case it will be noted that the child was not seen until after the ulceration had become established, so that no account could be given of the early appearance of the lesion. Besides this trouble in the throat, there were other manifestations, such as crusts on the scalp, keratitis, ceph-

[1] Sirop de Portal. The composition of this syrup is as follows:

Gentian root	20	grammes	(℥ v.)
Madder root	10	"	(℥ ijss.)
Bark of calisaya root	5	"	(℥ j. 15 gr.)
Radish root	30	"	(℈ j.)
Leaves of cress	100	"	(℈ iij. ℥ ij.)
Leaves of scurvy-grass	100	"	(℈ iij. ℥ ij.)
White sugar	1,180	"	(little over ℔ iij.)
Water	550	"	(Oj. ℈ j. ℥ v.)

M.

Pound up the radish and the fresh herbs in a marble mortar, express and filter. Steep the roots and the calisaya, broken up together, for twelve hours, in the prescribed amount of water. Express and filter. Then take 500 grammes (Oj.) of the colature and 120 grammes (℈ iv.) of filtered juice, heat it gently with the 1,180 grammes of sugar, and filter the syrup thus made after it has become cool.

alalgia, and paresis of the extremities. These are all of importance in determining the diagnosis, inasmuch as they would not occur in scrofula, whereas in syphilis they would be present.

The lesions of the bones and the articulations are found not only in the early, but in the late stages of hereditary syphilis. The characteristics of the lesions which occur in the early periods of the child's life have already been described, I shall now consider those of the later stages.

They may be divided into three groups. In the first, the periosteum, and the superficial layers of the bones are attacked, the manifestations being a thickening of the periosteum together with vascularity of this and adjacent tissues. The objective symptoms are, first, pain in the bones, and this is generally nocturnal, or, if not absolutely so, becoming worse as night approaches; second, swelling of the affected part with, sometimes without, redness, and third, decided pain induced upon pressure over the affected part. These pains are confined to the affected portions of the bones, none being excited when pressure is made upon other portions. Multiplicity is also another feature of this symptom, several bones being attacked simultaneously, and the muscular tissues being implicated with the osteocopic pains.

These pains are slow in their course and they seldom disappear rapidly, often lasting for months, where no treatment has been instituted, and show no signs of suppuration, unless they be aggravated by some injury, such as a fall or a blow. Neither do these pains induce a cachexia nor any deterioration of the general health.

If the disease is confined to the superficial layers, no great amount of harm is done, but when the disease extends to the deeper parts, to the proper substance of the bone, then serious trouble may ensue, not only locally, but constitutionally, because the lesion is then concomitant with a cachexia which has to be overcome before any permanent improvement can take place. In the first instance, an effusion takes place into the substance of the bone, either in its cancellated structure or else into its medullary cavity. This exudation increases slowly and is attended with very severe pain, and becomes in time a true sclerosis of the bone. The pain is of a deeper, duller character than those which accompany the more superficial type, and is not attended with any redness, but the next step is a profound alteration of the nutrition of the bone, the vessels become stopped up, and caries of the bone ensues. This caries is nearly always associated with a softening of the swelling, which sooner or later breaks down and suppurates, and this symptom is begun, certainly hastened, by the dead bone beneath.

Serious symptoms accompany these exostoses when seated within the structure of the bone, particularly if it encroaches upon the canals through which the trunks of large nerves pass. Thus, if within the cavity of the cranium, they may by pressure produce symptoms of compression, of

hemiplegia, of idiocy, and of the various phases of mental unsoundness, not excepting mania. This point I shall revert to further on. If placed near the foramina of emergence of the auditory nerve, deafness ensues, and if the compression have been sufficient to produce atrophy of the nerve-tissue, of course the deafness is irremediable. If the facial nerve be compressed, then uni-lateral facial paralysis is the result. But the gravest consequences follow when the bones of the hard palate, and of the nose, external and internal, are attacked, for here such permanent mischief is wrought as to render useless any attempt to artificially remedy the injury. The bones of the palate disappear like magic oftentimes, and the buccal and nasal cavities are thrown into one large cavity, interfering very decidedly with speech, deglutition, and the sense of smell. If the nasal bones are the seat of the lesion, then the bony framework crumbles away, and the nose is flattened out upon the face, the ethnoid and sphenoid bones being implicated in the general destruction. Dead bone is cast off, and this process is attended with a most fetid discharge from these cavities.

The bones of the face and the palate are the ones most frequently attacked, next the tibiæ, and after them, successively the femur, the cranium, and the upper extremities.

The articulations equally with the bones are the seat of trouble, the most common, indeed, the first manifestation being severe pains located in or about the joints. This pain is exacerbated at the approach of night, although during the day-time it is not wholly absent, only at that time it is duller, and is often compared to and spoken of as rheumatism. Sometimes a swelling of the joint is associated with this pain which (the swelling) is painless, and insensible to pressure. Here is usually the reverse of what is found in the exostoses. Effusion into the joint is also present, although not in great amount. The disease progresses, and the joint becomes purulent, openings take place at various points, and death of the cartilages and of the bone occur. If not this, then stiffness ensues, and the joint is comparatively useless.

The nervous lesions which are recognized as the sequelæ of hereditary syphilis are interesting from the many forms which they present, and from the many symptoms to which they give rise. They may be divided into the two groups, first, lesions which are produced by the disease in neighboring tissues, and alterations in the nerve-tissues themselves. The first of these comprise the lesions to which attention has already been called, of paralyses occurring to audition, and to the muscles supplied by the seventh pair of nerves. If an exostosis be formed in the spinal column, paraplegia ensues, according to the amount of compression exercised. If the compression be unilateral, then hemiplegia results. These cases are probably rare, although their existence has been demonstrated.

Cephalalgia is one of the most common, and at the same time most

important, symptoms of this form of disease. It is usually nocturnal, and is sometimes so severe as to produce serious mental derangements from a disturbance of rest and sleep, and it may even go so far as to produce active delirium and intellectual disorders, as in the cases cited by Fournier and Zambaco.

The convulsive symptoms which occur in hereditary syphilis are peculiarly interesting, because they are in my opinion of frequent occurrence, and because their true nature is often not appreciated. They are due to thickening with adhesions of the dura mater to the bones of the skull, or else to the presence of gummata in the substance of the brain itself. The case of Dowse, of London, already reported on pages 97 and 98, affords an excellent picture of these symptoms, together with their post-mortem appearances. They are frequently accompanied by an aura, the aura epileptica, and present the ordinary symptoms of convulsions. The attacks are often irregular in coming on, sometimes occurring early in the course of the disease, at other times not happening until a few days before death. If the epilepsy continue for some time, and if due to structural lesions in the substance of the brain, they lead to encephalitis and a fatal termination.

Such a case has been reported by Mr. Samuel Gee, in the "Saint Bartholomew's Hospital Reports" The patient, a child aged ten years, was born at term. At three years of age the child had general convulsions, and coma without any paralysis. At six years it had a fresh access of convulsions, and from this time its intellect was decidedly impaired.

On examination the patient was found to be small, with undeveloped condition of body; the left pupil was larger than the right, but there was no strabismus nor facial paralysis. There was a slight hemiplegia of the left side, and it dragged the leg in walking. The sight was very defective, the girl hardly seeing with the right eye. The ophthalmoscope revealed a retino-choroiditis with detachment of the retina.

During her stay in the hospital she succumbed to an attack of albuminuria with general anasarca.

At the autopsy the pia mater was found to be thickened and opaque, particularly on the left side, the left hemisphere was very much atrophied, and the convolutions were small, shrivelled, yellow, and sclerosed. The same condition of things existed on the right side, but was less pronounced. The same inequality was noticed between the right and left sides of the protuberance, the cerebellum, and the bulb.

The microscopic examination showed a diffuse sclerosis of the encephalon (*R. d. Sc. Méd.*).

Besides these convulsive attacks, others more serious in their nature occur as a direct consequence of hereditary syphilis. Dr. Bury, at the meeting of the Manchester Medical Society, gave the record of a case where dementia was caused by this disease, and showed the patient, a girl of four-

teen. "'She snuffed when a baby, and was covered with brown spots.' There was a distinct family history of syphilis; none of insanity or fits. There were now scars at the angles of the mouth, a shallow notch in the edge of each upper incisor, also advanced disseminated choroiditis. Her memory had been failing for three years, and there were other signs of progressive dementia of mild type. There was slight tremor of tongue and the cheek muscles, and partial loss of control over micturition. Dr. Bury gave post-mortem evidence of importance of syphilitic arteritis as a factor in these cases, starving and so causing atrophy of the brain."

Idiocy from the same cause has been noted in several cases, and histories of such lesions have been given by Critchett, of London, and Lancereaux, of Paris. In the case of the latter there was a premature ossification of the sutures of the skull.

In addition to these generalized affections of the nervous system, localized lesions occur in special nerves. Thus the third, fourth, fifth, sixth, seventh, and eighth pairs of nerves may be affected, an interesting instance of which has been reported by Dr. Thomas Barlow in the London *Lancet*.

"The subject was a male infant fifteen months of age, born at full term. The mother was weakly, but presented no symptoms of syphilis. The child had a narial (sic) discharge from its birth, and when two weeks old was said to have had thrush. It suffered also from diarrhœa, and was greatly emaciated. There was slight nystagmus of both eyes, of a coarse character and not constant; the pupils were equal and the disks healthy. There was slightly marked left facial paralysis. The diagnosis was cerebral tumor, probably tubercular, and no antisyphilitic treatment was pursued. But on post-mortem examination no tubercles were found in any part, and beyond a few patches of cicatricial thickening of the capsule of the liver and one on the spleen, no visceral changes existed except in the brain. That organ was not markedly atrophied and nowhere softened, but each of the third, fourth, fifth, sixth, seventh, and eighth nerves was the seat of a tolerably uniform enlargement at its superficial origin. The change was perfectly symmetrical. Microscopically there was found entire atrophy of axis-cylinders, and their replacement by a new formation of small round cells, with, in places, a few bodies resembling corpora amylacea. To the naked eye the changes are not unlike those of leprosy; but in leprosy the change takes place chiefly in the interfunicular tissue, and there is less destruction of nerve-tubules. The basilar artery and all the vessels composing the circle of Willis were thickened and opaque along their whole length, not nodulated nor calcified, but their lumen was much narrowed. The adventitia and muscularis showed cellular infiltration; but the changes between the endothelium and elastic layer of the interior were most marked, resembling those described by Huebner. The arteries of the second order were unaffected. Dr. Barlow believed this to be the

first case in which gummata occurring on nerves in congenital syphilis had been recorded; but he remembered seeing at University College Hospital an example of symmetrical gummata upon cranial nerves, and in the debate on syphilis last year, Dr. Moxon referred to a similar case. It was interesting that these lesions, usually regarded as tertiary, should be symmetrical; and the case was also important as being another instance of disease of the nervous system in congenital syphilis. In this case there was no affection of the meninges similar to the specimen which he exhibited earlier in the session."

In this case the lesions were for the most part confined to special nerves, and the syphilitic diathesis seems during life to have been overlooked, but the post-mortem examination, I think, leaves no reasonable doubt but that the disease was really one of syphilis. One very interesting feature was the presence of nystagmus, a symptom which has been only seldom observed in inherited syphilis.

Mr. Nettleship has reported a case in which the patient, a girl, aged fourteen, had paralysis of the third and sixth nerves on the right side, and partial anæsthesia of the skin supplied by the first and second divisions of the fifth nerve on that side. The eye on the affected side was much less prominent than on the sound side, possibly due to a symmetry of the bones on the two sides. The optic nerve could not be examined, owing to corneal opacity, and the pupil was adherent from old iritis. There were no brain symptoms.

The affections of the eye have already been noted in the earlier part of this book, principally in connection with the earlier years of infancy, and it will be appropriate to consider here what changes occur in these organs during the late inherited forms of syphilis. Keratitis is one of the commonest, but many of the recorded cases where this lesion has been present have probably commenced in infancy and have never entirely disappeared. Even at the present day, curious as it may seem, some writers on affections of the eyes deny the existence of interstitial keratitis as dependent upon inherited syphilis, but in this country, at least, oculists admit its reality without laying it to the door of scrofula. Its progress and external appearances do not differ from what takes place in the form already described; but there is one point which I think deserves special notice. Mr. Hutchinson, indeed, I suppose most surgeons, regard this form of eye disease as pertaining to the inherited type of disease and not to the acquired form. I admit at once that all the instances in which I have met with it have been in congenital syphilis, and I have never seen it in the acquired form. Mr. Hutchinson in his work ("A Clinical Memoir on Certain Diseases of the Eye and Ear, consequent on Inherited Syphilis") makes the following statement, which shows clearly what his opinion is: "I will not make so sweeping an assertion as that interstitial keratitis of typical form never occurs but in the subjects of inherited taint, yet I cannot conceal from

myself, and have no wish to do so from my reader, that such is my present belief."

Panas has steadily refused to admit the syphilitic origin of this affection, insisting that it is always due to scrofula (Augagneur), but in that view I think he has few adherents in America. But the question with which we have now to deal is not as to its possible scrofulous nature, but whether this lesion is found in other than the hereditary forms of syphilis. I hasten, however, to say that, admitting it does, the value of its presence in infants and young children is not a whit impaired, since they are not likely to acquire syphilis, and when they do, it is quickly found out, but in the consideration of cases now under discussion, where the patients would be very likely to contract syphilis in the usual way, it becomes a matter of considerable importance to have this possibility clearly settled one way or the other.

Desmazes, Fournier, Galezowski, and others have all recorded instances where it would seem to have resulted directly from acquired syphilis, although in all the cases which I have read the possibility of it being hereditary has not been formally excluded. Lacombe, in a thesis published in 1879 ("De la keratite interstitielle dans la syphilis acquise"), has given the history of many cases, which are extremely interesting, and one of which I transcribe here as showing the manner in which it comes on in the course of the disease.

"First case. (Unpublished, and due to the courtesy of my friend, M. Felix Despagnet.)

Madame R——, a maker of artificial feathers, . . . married and without children, has always enjoyed good health. In the month of February, 1876, she contracted syphilis, which was followed by the usual symptoms, to wit: mucous patches in the mouth, crusts in the hair and falling out of the same, with a roseola.

On August 15th of the same year, the patient noticed a slight haziness of the right eye, which progressed daily, and which was speedily followed by pain in the preorbital region of the same side, and a very intense lachrymation of the eye, which came on in paroxysms. On the 25th, the eye became red and this injection increased up to the time that she came to the clinic at the Rue Dauphine.

She is a well-built woman, strong and vigorous, presenting no symptoms of scrofula. The right eye is bandaged, and when she removed this she covered her eye with her hand so as to protect it from too strong a light. The eye was very red and all the vessels converged toward the upper part of the cornea, of which a third was occupied by a spot of a chalky white color, shaped like a segment. The iris was normal in color, and the pupil was regular in color and contracted normally. The preorbital pains have increased from the start and have become almost unbearable.

The cause of her trouble she told us herself, for to that she attributes the eruption on her skin, of her mouth, and the loss of hair. Besides, she has still some mucous patches of the lips, and of the anterior pillars of the fauces. It is difficult to ascribe the lesion of the eye to any other cause than syphilis, and by exclusion, if not by reason, we must admit it as the source of the keratitis. There was no reason for hesitation in prescribing a special course of treatment; she was ordered the iodide of potassium in doses of one gramme (15 grains), to be increased to two grammes (30 grains) a day, as constitutional treatment, and locally instillations of atropine, four drops a day, 0.05 of atropine to 10 grammes of distilled water (about one grain to two and a half drachms); steam douches to the eye and coquilles of smoked glass. For the first ten days the instillations of the atropine were continued four times daily, and twice the following days; progressively the dose of the iodide was increased from two to five grammes (30 to 75 grains). After a month's treatment, the affection presented no material improvement; the iodide of potassium was replaced by the biniodide of mercury; two pills of two centigrammes ($\frac{1}{3}$ of a grain) each, the douches and atropine to be continued.

A fortnight later there was a marked improvement. Two months later, the injection had almost disappeared; the pains had decreased, and the photophobia had gone.

On December 1st, three months and a half from the commencement of the disease, the cure was complete.

Other cases are published of the same nature, but it is not necessary to give them here. It suffices to say, that it is hard to avoid the belief that the keratitis was the result of the acquired syphilis, and if this be admitted, how are we to depend upon this symptom as diagnostic in cases of late inherited syphilis? It certainly loses much of its value. However, as I have already stated, it is still a trustworthy guide in cases of infants, for the reasons given above.

Iritis is another symptom which occurs during both the early and late periods of inherited syphilis. In the latter class of cases, the iris is covered with exudations and the pupillary margin becomes adherent to either the anterior capsule of the lens or else to the posterior layer of the cornea, the membrane of Descemet, when it often gives rise to some opacity of the cornea. But this extension of trouble to the cornea must not be confounded with the genuine infiltration which has already been described. Associated with it is an inflammation of the ciliary body, a cyclitis, which is nearly always indicative of some deep-seated lesion of the choroid.

Nystagmus is a symptom which has received but slight mention in these affections of the eye, and possibly from its rarity; yet it has been observed in some cases, as for example in the case of Dr. Barlow, quoted on page 287. Mr. Spencer Watson, at the same meeting, when Dr. Barlow

detailed the history already given, stated that he "had recently under his care a child two or three years of age, presenting marked nystagmus. Both parents were syphilitic, and the nystagmus was cured by mercurial treatment. Possibly there might have been gummata on the cranial nerves in this case. He did not think it uncommon for children, the subjects of congenital syphilis, to have nystagmus, which was probably often due to impaired vision from disease of the choroid."

Whatever it may be in London, in this country I do not think it is the common affection in inherited syphilis which Mr. Watson considers it.

The choroiditis seen in this stage is usually of the disseminated form, which begins with an effusion into the layer of the choroid, causing maceration and denudation of the pigment-cells, and being followed by atrophy of the choroid. It is then noticed as large patches of irregular shape, and of a dull white color.

Heredito-syphilitic retinitis has already been fully described in a former portion of the book, and needs no further description here. A detachment of the retina sometimes follows this form of disease, and is generally irremediable.

The lesions of the ear are even yet but little understood, and are nearly all confined to deafness, which comes on suddenly and is frequently unaffected by treatment, such as is noticeable in the history of the sister of the patient whose case is narrated by Dr. Atkinson. This trouble may be caused by extension from disease of neighboring parts, such as periostitis of the bony canal through which the auditory nerve passes, and provided the compression has not been sufficient to cause atrophy, is curable by proper means. If atrophy result, of course, nothing can be done for the relief of the deafness. Another source of cophosis is gummous infiltration into the nerve-sheath, when the usual result is incurable deafness.

Mr. Dalby, Aural Surgeon to St. George's Hospital, London, gives such a good description of these affections that I quote his article on the subject at length. He says, "There are several ways in which syphilis may be the means of causing either permanent or temporary loss of hearing; and the most important, perhaps, of these is the extreme and irremediable deafness which is sometimes met with in the children of syphilitic parents. Next to scarlet fever, inherited syphilis may be reckoned as the most fruitful cause of deaf-mutism, as it occurs in children who are born with good hearing power. This is owing to the very early age at which these children generally become deaf, and the rapidity with which all hearing is sometimes lost. Out of a large number of children who markedly inherit syphilis, only a certain proportion of them will lose their hearing; and from this large number the selection of subjects (so to speak) who are to become deaf, follows no law with which we are acquainted. A similar apparent uncertainty may be observed as to the rapidity with which

the hearing is lost; for whilst with some in a few months, or occasionally a few weeks, all hearing is gone, with others several years of gradually increasing deafness precedes the extreme which it finally reaches. With others, again, some degree of hearing power remains throughout life.

The disease under notice is essentially a nervous one—*i.e.*, the nervous and not the conducting part of the auditory apparatus is at fault. It is of the utmost importance that this affection should be clearly recognized as having no connection whatever with changes that may be found in the tympanum. I have frequently known considerable confusion to exist on this point, and in the following way: A deaf syphilitic child is observed to show evidence of more or less tympanic disease; it is straightway argued that this local affection is due to the inherited syphilis. The child gets well under treatment, and the syphilitic affection of which I am speaking is said to have been relieved by certain remedies, the true explanation being that the syphilitic child, unaffected by syphilis so far as its ears are concerned, has had a catarrhal affection of the middle ear, which has yielded to the ordinary remedies applicable to such cases. Or (to give another example) a child who is deaf in part from inherited syphilis, and in part from tympanic disease otherwise acquired, derives partial benefit from treatment, and the syphilitic disease is said to have been relieved.

Errors of this kind are the result of a too limited observation, and to estimate clearly the value of any treatment in the syphilitic nervous affection it is necessary to notice the course of the disease as seen in those children who have healthy tympana, together with the rest of the middle ear as well as the external ear in a condition of perfect health. With such as these no treatment within the knowledge of reliable authorities has the slightest influence on the hearing, and it will also be observed that vibrations of sound (which would be well heard if the tympana only were affected) conveyed through the cranial bones make no impression whatever.

Along with the impaired hearing there is almost always some other distinctive mark of syphilis: the characteristic teeth, interstitial keratitis, or both. Again, in these children there are certain limits of age at which the hearing suffers. Thus, they are born with good hearing; the most usual time at which they become deaf is early childhood (after they begin to talk), or the period between this and puberty. The eldest example in which I have observed this form of ear disease to begin was twenty-three years old, so that it may be roughly said that if adult life is reached with good hearing, these subjects do not become deaf from the same causes which produce this symptom in earlier life. Whether the seat of the lesion which impairs the functions of the auditory nerve is in the labyrinth or in the nerve before its termination in this structure, has not at present

been determined. Attention was first directed to the existence of the lesion by Mr. Jonathan Hutchinson."

Ozena from ulceration of the bones of the nose is not an infrequent lesion in the hereditary forms of syphilis, and when this results it is generally accompanied with an impairment in the sense of smell. This also occurs as the sequence of cerebral affections, gummata, sclerosis, etc. Simple anosmia has likewise been observed. Lancereaux gives the notes of a case where the patient presented the following lesions: "The patient was forty-one years of age, and when eight to eleven years old she had trouble with her eyes and became almost blind. At fourteen years she became deaf. At twenty-two, loss of hair and headaches. At forty, had pleurisy and hæmoptysis. On her entrance into hospital, it was noted that she was of very small stature and undeveloped; the breasts were no larger than those of a girl under puberty, and she had never menstruated. The mons was smooth, and it was with difficulty that the finger could be introduced into the vagina. The hymen was rudimentary and unbroken. The voice was hoarse and nasal; the teeth were notched. She was very deaf and had lost the sense of smell. Auscultation revealed phthisis in the second stage."

The viscera also present lesions which are to be attributed to this cause. Those of infancy have been detailed, and it remains to speak of those which are seen during youth and adult age. In 1849, Dittrich had seen three young persons of adult age die with symptoms of ascites and albuminuria, in whom there were ulcerating lesions of the naso-pharyngeal region. At the autopsy, he found lesions which he regarded as specific.

Many other cases have been seen and reported, and the existence of these lesions has been well established. The usual symptoms complained of are pain in the hepatic region, ascites, and albuminuria. Sometimes the liver is found to be enlarged, at other times it is atrophied. At the autopsy these lesions consist of two kinds; cicatrices and tumors. The former are present in the form of large and deep furrows seated on the surface of the viscus, and are principally made up of connective tissue new formations which are lardaceous and very hard. They penetrate deeply into the substance of the liver, dividing it into lobules which are prominent and bossellated. At the periphery of the organ, localized spots of peritonitis ensue which causes adhesions to the diaphragm and other portions of the abdominal cavity as well as to the other viscera.

When gummata are present, they are seen as circumscribed swellings in the hepatic structure.

The capsule of Glisson is also thickened and fibrous, and the prolongations into the substance of the liver produce a certain amount of sclerosis.

Death ensues from albuminuria and cachexia.

The nose and the pharynx are the favorite seats of these lesions, and they have been more carefully described than any of the lesions of this disease, except it be those of the eye. They are seated in all parts of the nasal and pharyngeal cavities, usually in the diffuse form. These speedily break down and lead to serious deformity from the destruction of the palate, both hard and soft. Nor are the results of cicatrization less disastrous, for adhesions frequently take place between the palate and the posterior wall of the pharynx, producing an almost complete closure of the posterior nares, pierced here and there with small cribriform openings. The respiration is, of course, seriously interfered with.

The ulcerations of the pharynx, usually in its posterior wall, are very grave; first from the danger of necrosis of the vertebral column and exposure of the cord, and secondly, from the serious stenoses which follow on the cicatrization of these ulcers. The ulceration and stenosis sometimes implicate the œsophagus, when the patient frequently perishes from inanition due to the impediment to deglutition interfering with a proper nutrition of the body.

These ulcerations in former times gave rise to much discussion, more than they do at the present time, when their nature is more clearly recognized and acknowledged, owing to the fact that they were looked upon as being scrofulous. But the remedies which prove of service in scrofula are inert here; the only treatment which is of any avail is an anti-syphilitic one. Under the use of mercury and iodine many an unpromising lesion of this kind has healed up.

The gummata are not uncommon lesions, and present themselves as tumors lying beneath the mucous membrane, imbedded in the muscular tissue of the soft parts, or else as infiltrations beneath the periosteum of the hard palate. These latter would come under the head of osseous lesions rather than lesions of the nasal and pharyngeal regions, except that the relations between the parts are so intimate, and the mischief done is so important as to render a consideration of the two together necessary. When the lesion commences as a diffuse infiltration, the tendency of the resulting ulceration is from within outward to the skin, while the other variety extends inward to deeper tissues.

The progress which these affections make is often slow and chronic; after the ulceration is once established, but before it has broken down, the course is rapid, the ulceration taking place speedily and then remaining sluggish. The pain is a very variable symptom in these affections: sometimes there is none, at other times it is severe, and especially is this marked when the throat is the point of attack. Then the difficulty experienced in deglutition is marked and great pain is present.

The direction pursued by these ulcerations differs in different cases, extending sometimes toward the anterior parts of the nose, at others progressing down the pharynx, where they create serious deformity, and after

cicatrization decided impediment to respiration. The ulceration, in its progress, whether it be anteriorly or downward, destroys all the tissues which stand in its way; the bones of the nose and those of the skull, the ethmoid and the sphenoid, are necrosed and discharged in fragments, this process being attended with a most fetid, evil-smelling discharge. When the pharynx is attacked the posterior wall is the seat of vast excavations and cicatrices, which produce a stenosis of the part. The larynx also comes in for its share of trouble, the epiglottis is eroded, the rings of the trachea are laid bare and oftentimes necrosed, the false cords are the seat of gummous infiltrations or else of ulcerations, and the volume and timbre of the voice is materially altered. The voice is harsh, hoarse, and dissonant; sometimes, when the ulceration is extensive, the patient is aphonic. A continual secretion of matter comes from the throat and from the nose, which continues until the dead bone so often associated with these lesions is sloughed away. With such extensive ulcerations and loss of tissue between the cavities of the throat and nose, it would be supposed that regurgitation of food would be very marked, but to judge by the reported cases it would not seem to produce much disturbance. It has been suggested that the tongue speedily acts as a valve, shutting off the communication between the two cavities and thus preventing the regurgitation.

Many of these lesions, if not all of them, which are seen in the hereditary form of syphilis, resemble in their gross appearances and course similar lesions which have their origin in the acquired type. Nor is this singular, for it is the same disease, and there is no good reason that there should be any marked difference between them merely because one is derived by inheritance and the other is not. Of course, the inherited variety is more apt to be attended with serious consequences, because the patient is not in as good a condition to withstand the power of the disease, as he or she commences life with a vitiated constitution, and the chances are against him. But let him survive the first few years of infancy, and then the subsequent lesions are less likely to end fatally, the patient has perhaps a better chance of life, and the symptoms, which are of the same nature as the late lesions of the acquired form of syphilis, should present the same appearances. And they do.

The lesions of the larynx and the trachea frequently extend downward to the lungs, when they give rise to symptoms which simulate phthisis, or else the disease shows itself independently as gummous infiltration of the pulmonary tissue. These gummata soften and break down, leaving cavities behind them which present all the subjective symptoms of phthisis.

The symptoms have given rise to much discussion as to the existence of a syphilitic phthisis, but I think it must be admitted that beyond the existence of a disease such as has just been spoken of, no such affection is known as

syphilitic phthisis. That cavities do exist in the lungs of persons affected with syphilis I do not for a moment deny; but do they commence in the same way as in phthisis proper? Is there a general infiltration of the lung, especially at the apices—is there the same wasting away—is there the anorexia and the night-sweats found in tuberculosis? Some writers speak of a caseous syphilitic pneumonia. I think this a needless multiplication of terms tending to produce confusion. It is nothing more than an infiltration of cells such as is found in nearly all the lesions of syphilis, and which naturally produce physical changes in the lungs and impediment to the inhalation of air into the lungs. But in the pneumoniæ of non-specific origin will treatment by mercury be of the same benefit which it certainly is in the syphilitic form of pulmonary congestion? I think not. I know that large doses of calomel have been advised in case of pneumonia at the outset of the attack, but I submit that this is entirely different from the steady continuance of mercury which is required when treating "syphilitic pneumonia." But be it as it may, the lungs are also attacked, in common with the other viscera, with an infiltration which may be either diffuse or circumscribed. Both varieties soften and break down, leaving cavities, and when these latter heal produce cicatrices.

The organs of circulation are the seat of degenerative changes which have been spoken of when the symptoms of syphilis in the infant were under discussion. Dowse's case showed inflammation of the arteries composing the circle of Willis, and other cases are reported where the vessels of the brain showed degenerative changes due probably to inherited syphilis. The heart in infants has presented gummous infiltrations, but I do not know of any cases extant in medical literature which prove the presence of cardiac lesions in grown persons the subjects of inherited syphilis.

One case has been recorded by Schwimmer, quoted by Augagneur, where a person with this variety of syphilis presented at the autopsy an aortic insufficiency with aortic dilatation and dilatation of the left side of the heart. It should be noted that many subjects of aortic aneurism have had syphilis, a point which was used by some English writer to prove that syphilis was a fruitful cause of aneurism of the aorta.

When the kidneys are the seat of syphilitic lesions, albuminuria is one of the most constant symptoms as well as one of those which are attended with a fatal termination, dependent upon one of two things, cachexia induced by the disease or else by uræmic poisoning from the renal lesion. Perhaps each plays a part in the cause of death.

In cases where autopsies have been made of patients the subjects of inherited syphilis who have died, the following lesions have been discovered. The substance of the entire viscus has been altered, and the organ has been the seat of vascular changes, the parenchyma has become altered, and the tubules modified. In fact, one peculiarity which has been claimed

for this class of syphilitic disease is that it embodies at the same time all the types of diseased kidney—the interstitial, the parenchymatous, and the amyloid degeneration.

Besides these lesions, nodules of syphilitic material are found, which soften, as these gummous deposits do elsewhere, and either discharge their contents through the ureters or else become cretaceous. When amyloid degeneration occurs, it is nearly always associated with an amyloid degeneration of other organs and is a presage of death. The syphilitic cachexia is nothing else than a general amyloid degeneration.

Affections of the genital organs of both sexes have until very recent times escaped the attention which they deserve. According to the French observers, they are not uncommon. M. V. Hutinel, from the Clinique des Enfants Assistés, has given a very good description of the heredito-syphilitic affections of the testis, a *résumé* of which is given in the *Revue des Sciences Médicales*, etc. The lesion commences by an enlargement of the testicle, it is harder and heavier than it normally should be, and this hypertrophy of tissue is confined to the body of the organ, for the epididymis is usually intact. Instead of the soft and yielding consistence which it has at this age, the testicle shows a resistance beneath the finger equal to, if not greater than, that which the eye possesses; it rolls beneath the finger like a marble in the scrotum, but with all this increase in size, there is no effusion into the vaginal sac.

At the commencement of the affection, the first manifestations of the disease are found about the periphery of the arterioles which cross the fibrous partitions of the gland, an accumulation of round and regular embryonic cells, similar to white globules, are deposited about the meshes of connective tissue; they there form a species of gummous nodules, which from the readiness with which they absorb coloring matter, stand out boldly from the surrounding tissues. These deposits are rarely distributed regularly along all the vessels; they are nearly always grouped together in little clusters, so that three or four of them are found on making a transverse section of the testis. The remainder of the organ is healthy; the vessels themselves have undergone no material changes, the testicle is red and congested, but it is not markedly hypertrophied.

When, however, the morbid process has penetrated to the seminiferous tubules, hypertrophy begins. Then it is that not only enormous masses of rounded cells are seen to encircle the arteries of the septa of the organ, but they penetrate, with the capillaries, into the inter-spaces of the tubuli seminiferi of the gland; and then the canaliculi are seen to be obliterated by small dilated vessels about whose long axis rows of embryonic cells are seen to be ranged. In these instances, the glandular stricture has suffered but little; as the lesion remains perivascular the proliferation is still interstitial.

From this point the sclerosis may become diffuse, and at this stage the tubuli seminiferi become atrophied; then are found in the interspaces of the glandular canals, along the course of the vessels, numerous rounded or irregularly shaped bodies, which closely resemble young cells of connective tissue, scattered about without any sort of order in the delicate meshes of the reticulated tissue. If this sclerosis advances, these tubes, which are thus surrounded by a series of fibrous bands which strangle them and diminish their calibre, are not more than one-third or one-fourth their usual diameter, and at certain points, they are almost entirely obliterated, while at the same time their epithelium undergoes a more or less marked change.

In short, the testis of syphilitic infants undergoes two changes: at first, there is an aggregation of embryonic cells about the pourtour of the vessels; then, the interstitial tissue becomes thickened and infiltrated with cell formations, and lastly, the seminiferous tubules are choked up in the sclerosed tissue.

Although these lesions of the testis are frequently seen in infants who are the subjects of hereditary syphilis, they are not as common as the affection of the liver or the bones.

Orchitis at a tender age (a lesion rarely seen apart from syphilis) should always be a matter of considerable importance; every cachectic and sickly-looking child who has suspicious-looking fissures about the natural orifices, who has erythema about the gluteal regions, should be considered as syphilitic, if the testicles are enlarged and hard, no matter if they are not painful.

The future of the testis is not very encouraging; atrophy, as a consequence of the sclerosis, is probable, and the child grows up to become a sterile and impotent creature.

Lesions of the bladder have been observed in a child as the result of an acquired syphilis (Proksch, "Zur Geschichte und Pathologie der syphilitischen Ulcerationen der Harnblase"), but I do not know of any case where they have occurred from an inherited taint. By the way, it is interesting to note that in this case, which was one of Tarnowsky's, there was a urethritis present, and on post-mortem examination the urethra was found to be the seat of superficial "syphilitic" ulcerations.

The penis is generally small and undeveloped, and the mons Veneris either innocent of hair, or else the growth is scanty. The virile power is weak and the semen is devoid of spermatozoa, as would naturally be the case where the testes had undergone atrophy.

In females, the lesions are said to be even more pronounced than in the males. Menstruation, if not absent, is established very late in life. Thus, in the case of Lancereaux, quoted on p. 293, the patient, although a woman of forty-one years of age, had never menstruated, and at the autopsy the following condition of things was found: The genital or-

gans were not more developed than those of a girl of ten years old. The ovaries were rudimentary, and showed no Graafian vesicles; and the vagina was so narrow as to have rendered sexual intercourse a physical impossibility.

In one of Laschewitch's cases, menstruation was not established until the woman was eighteen years old, while in the other, the uterus was undeveloped; it was simply rudimentary.

The breasts share in this general lack of development. They are often no larger than are the breasts of a girl of ten years of age, that is, there are none. Schwimmer gives one curious case in which the patient, a woman twenty-three years of age, was pale, small, and badly nourished. The mammæ were scarcely developed, the genital organs were completely atrophied, the mons Veneris was almost devoid of hair, the hymen was intact, and the vagina was very narrow, scarcely admitting the finger. The patient presented the appearance of a girl of fourteen. *The catamenia appeared only once, at the age of twenty-one.* (Augagneur.)

The ovaries undergo changes similar to what has been seen in the testicles. Parrot speaks of having seen ovaries of syphilitic girls in which traces of subacute inflammation existed.

In these pictures which hereditary syphilis presents to the medical eye one thing continually recurs, namely the defect in development, which is present in all of these cases. Hereditary syphilis is essentially a disease marked by a lack of proper growth, not only as regards the general condition of the body, but of all the organs concerned in the phenomena of life; and not only that, but it is also a disease which is marked by a decided tendency to degenerative changes, and atrophy. To present to the mind of my reader a typical picture of the child who is the subject of inherited syphilis, I cannot do better than quote the words of Augagneur: "Had I, in a few words, to present the ideal clinical type of late hereditary syphilis, I should select a young girl, eighteen or twenty years old, whose eyes should present traces of parenchymatous keratitis, the teeth should be eroded and crescentically notched, at the same time they should be small and irregular; the hearing should be partially or totally lost in consequence of frequent attacks of otorrhœa; the genitals, possessing all the attributes of virginity, should be small, the mons Veneris and the axillæ should be smooth, the mammæ without prominence, and menstruation should scarcely be established. Add to this all the tertiary lesions you please, and you will have before you a complete picture of late hereditary syphilis. . . ."

"To the trilogy of Hutchinson—interstitial keratitis, defective incisors, and otorrhœa, I propose to add two other signs: general genital atrophy and general arrest of development."

This arrest of development has within the last few years attracted more attention than it has ever received before, and the connection which exists

between infantile hereditary syphilis and deformities in children has been more closely observed. Thus the congenital deformity known as hare-lip, which has been ascribed to that vague and unknown condition called "maternal impressions," is now shown to have a probable connection, in some cases at least, with hereditary syphilis. Dr. Thomas R. Brown, of Baltimore, Md. *Archives of Dermatology*), gives the histories of four cases where cleft palate was found in children, who were the subjects of hereditary syphilis. In the second case the mother's history is not quite clear, but the first, third, and fourth cases seem to be pretty positive. I give the histories of these three cases, as instances of this affection dependent on the hereditary taint are unusual.

Case 1.—Mary S——, unmarried, was admitted to the Maternity Hospital of the College of Physicians and Surgeons to await confinement, which took place in due time and was in all respects natural. The infant at the time of birth was well nourished and looked to be vigorous. There was a deformity in its mouth, consisting of a cleft in both hard and soft palate, and a hare-lip of the left side. The hare-lip was of such a nature as to make it impossible to nurse, and for the purpose of meeting this difficulty the usual operation was performed ten days after birth. It would be well to state in this connection that, except there be some serious depravity of the patient's health, modern surgery approves an early attempt to remedy this deformity, for very obvious reasons.

One week after the operation, a mucous patch attacked the line of the incision which enlarged rapidly to about the size of a five-cent piece. The result was that, except at the labial border, the adhesions which had formed were broken up and the wound presented an ugly, ragged appearance. Somewhat later there appeared a profuse papular eruption over the greater part of the body, and later still, desquamation of the hands began, notably of the palmar surface of the fingers. The little patient soon lost its ruddy appearance, wasted, and looked puny and old.

Under specific and other tonic treatment its health improved. The medication consisted of the officinal "Hydrargyrum cum cretâ," which, though given in doses of two grains repeated every three hours, lasted over a considerable period of time, caused no bowel irritation nor any but good effects. When dismissed from the hospital, it was gaining flesh and strength as rapidly as could with reason be expected.

It was ascertained from the mother that during her pregnancy she suffered from intractable sore throat, a diffuse eruption, with nothing definite as to sore on genitals or elsewhere. There was good reason for believing that she had syphilis, but owing to the frequency of her exposures, no attempt was made to find the source of her contagion. It was enough for our purpose to establish the fact, beyond cavil, that the child had syphilis, the appearance of which, I could hardly help from believing, was hastened by the depressing effect of the operation.

Cases 3 *and* 4.—Mrs. L—— is a private patient of mine, with whose history I am quite familiar. She has been married three times. By her first husband, who was healthy, she had but one child, who has reached manhood in splendid health. From her second husband she contracted, what the physician called "the seven years pox." The tolerably clear statement which she makes of what she has suffered, the numerous scars on the different parts of her body, the history of periosteal and pericranial nodes and pains, together with the appearance of her mouth, confirmed the doctor's opinion as to her disease. After the nature and source of her malady were made out, she separated from her husband without bearing, and before long was married to her third husband, who enjoys excellent health.

Since her last marriage, she has had well nigh one dozen pregnancies, all but three of which, and those the last, ended in abortions. Two of these three which came to full time, had cleft palates and hare-lips, and died very soon after birth with "catarrh." It was during the next to the last pregnancy that my attention was called to her syphilitic condition, and I then instituted a vigorous anti-syphilitic treatment. Her last child is now living, and with the exception of some maculæ scattered here and there over the trunk, has been all right. As a precautionary measure, mercurial inunctions are occasionally used with the hope of subduing any syphilitic tendencies which may be lurking in her system.

These cases are interesting, inasmuch as they show that inherited syphilis may be the cause of hare-lip, not as a necessary accompaniment of the taint, but as a result of the lack of development which is induced by syphilis of this variety, just as the notched teeth of Hutchinson are examples of the same condition attacking other parts. Now, the only way in which maternal impressions cause these deformities is by arresting development, so why may we not consider that syphilis can do the same? I see no good reason for denying it that power, hence, although such cases are as yet few in the literature of the subject, I am inclined to believe it is possible of occurrence, and to accept the statement that syphilis can give rise to this kind of deformity.

The question of treatment of the early lesions of inherited syphilis was discussed in the former part of the book, but it was principally with reference to the symptoms which occurred before the child had passed the first five years of its extra-uterine existence. Let us now consider the methods to be pursued for the relief of the symptoms which have just been passed in review under the form of late inherited syphilis.

It will be borne in mind that I there pressed the claims of mercury as against those of the iodide of potassium, for recognition as the best agent in the cure of the manifestations of this disease. Now, however, I can urge the advantages to be derived from the use of the iodide, not even here, to the rigid exclusion of mercury, but as a means, and a potent one,

for the relief of the ulcerations, the gummous enlargements of bone, nerve and other tissues which are now met with. But in order to do the most good with the drug, it must be given with understanding and not at haphazard. There is nothing more common than to hear the statement made: for syphilis the two drugs to give are mercury and the iodide of potassium, or, as it is improperly called, "potash," without any idea as to when the one drug should have the *pas* of the other in the course of the treatment. The average practitioner thinks that if he gives his patient mercury for a little while and then winds off with a "course of potash," he has done all that can reasonably be expected of him, and all that a man of sense can do; and if the disease does not disappear, then so much the worse for the patient. Now, to my mind this is a poor and reckless way of treating the disease; it is getting less out of the remedies than can be got out of them, and leaves the surgeon very much in the dark as to how much good or harm he is doing. Neither of these two drugs is an enemy of syphilis; the old idea of the antagonism of drugs to disease is pretty much abandoned at the present day; all that the drugs probably do is to favor elimination of dead tissue and cause the disappearance of the symptoms. As soon as that point is reached, I do not believe it is wise treatment to continue the medicine; but the symptoms or manifestations of the disease must entirely disappear before treatment can be suspended with any prospect of effective results. The points, then, which are to be considered are when should medicines be given and how.

Let us suppose a patient to present himself for treatment with the following symptoms: He is weakly and stunted in size, his appearance cachectic, and his voice betokens, from its nasal intonation, that the palate is the seat of ulcerations. Upon examination of the mouth and throat, it is found that there is a large opening which communicates with the posterior nasal cavity, the soft palate has almost entirely disappeared, the hard palate, is perforated, there is an abundant, stinking discharge from these ulcerations, the bony part of the nose is sunken, and the probe detects dead bone. We will, if you please, add a leucoma in one or both of his eyes which seriously interferes with vision. Besides, one or more of the incisors are notched or irregular in shape, one being of normal length but notched, the other shorter than its fellow, is shaped like a screw-driver, coming to a narrow point at its cutting edge, and he shall suffer osteocopic pains with enlargements of the bones of the shins and forearms. We make the diagnosis of hereditary syphilis, and perhaps the history confirms the opinion. But in these cases we must be careful not to rely too much upon the history of the patient; it as often misleads as helps, not from any intent to deceive on the patient's part, but simply from ignorance.

What shall be done for the patient's relief? This is precisely one of those cases where the iodide of potassium will render the most brilliant ser-

vice ; where its effects are distinctly visible. This drug then is the one to be selected, and how shall it be given? Our patient, we will suppose, is an adult, although his appearance may not indicate it, and we can generally give the drug in full doses. But what is meant by full doses? Just as much as is requisite to heal the symptoms which exist, whether the daily amount required be five hundred grains or only twenty. But it is asked, will any patient stand such a dose as five hundred grains per diem? Yes, and thrive under it. Every case will not need that amount, and if it is not requisite, then it is mischievous. But one remarkable feature in this class of patients is the tolerance which they exhibit to the doses of iodide and of mercury which may be required. Many practitioners are a little afraid of using the remedies to their full extent, and what between their timidity on this score and their dread of the disease, they fail to do much good.

While counselling prompt measure I do not advise rashness ; on the contrary, mix prudence with energy and feel your way to the large doses. Prudence does not argue timidity, it is compatible with boldness. Begin then with a single dose of from ten to fifteen grains of the iodide, and increase each dose five grains until the point is reached where the symptoms begin to disappear ; that point reached, drop down to the amount just below that one and continue with that dose until the manifestations have entirely vanished, or until some indication exists for changing the drug.

The best way of administering the iodide is to give it as a supersaturated solution, each minim of which solution will represent three-fourths of a grain, and every four minims will contain three grains of the drug. Administered in this way, the amount can be exactly measured, and the surgeon can tell precisely the amount of the medicine his patient receives. And not one of the least advantages of this method is its convenience of administration. The vehicle in which the iodide is given may be either distilled water, peppermint water, or water of orange flowers, in fact, almost any ingredient which the surgeon's fancy may dictate.

Two facts to be remembered: first, always dilute the mixture well, because it is absorbed more readily, and second, always give it after eating, never on an empty stomach. If given as thus suggested, the iodide will not disturb the stomach ; otherwise, it will be likely to produce gastritis, when its administration will have to be discontinued. The iodide of potassium has been charged, when given in large doses, of producing albuminuria and Bright's disease, and atrophy of the testicles in the male, of the breasts in women. Such has not been my experience with the drug ; perhaps some patients with late syphilis have shown casts in the urine with albumen, but in such cases I am satisfied that these symptoms resulted from the disease, *i.e.*, syphilis, and not from the drug ; at least in

those cases in which I have had an opportunity to observe these manifestations of nephritis, they have continued after the use of the iodide had been suspended, whereas were they due to the drug, the casts and albumen should have disappeared shortly after the discontinuance of the salt. I, therefore, do not yet believe that the fault lies with the iodide. Nor have I seen any instances of the atrophy of the testes and mammæ which are said to result from its use. It should be remembered that it is in just such cases that this variety of atrophy is likely to occur.

When shall mercury be used? is the next question. So soon as the more urgent symptoms are relieved, as for example, when the osteocopic pains are relieved, or the ulcerations show evidences of cicatrization. The iodide will frequently cure the symptoms up to a certain point, and beyond that no further improvement is noticeable. Now is the time that mercury comes into play; the iodide has prepared the way for it and has acted as an excellent adjuvant for the mercury, but it is this latter which has generally to be used to finish what the iodide has begun. Or another thing happens: the iodide has been used without cessation and the symptoms have yielded to it. But a relapse occurs shortly after, the symptoms are again cured, and again they reappear. This goes on until mercury is given, when the manifestations are finally healed not to reappear.

Shall the mercury and the iodide be given together? Some surgeons give them mixed in that way; I, for my part, prefer giving them separately, because each may be increased independently of the other. And this is a great advantage. Give the iodide twice or thrice during the day; the mercury in one single dose, all after meals, except the last dose of the iodide, which may be given at bed-time.

What preparation of mercury shall be used? The time-honored bichloride is the first which suggests itself, but there are, *me judice*, other combinations which are better. Foremost of these for internal administration is the protoiodide of mercury, which is better in many respects than the bichloride, first, because it is not so likely to act upon the bowels; second, because it does not tend to salivate so readily; and third, because its action is gentler and none the less certain. It should be given, unless good reason exist to the contrary, in doses of one-half to the full grain, at one dose.

The advice which is sometimes given of not administering the iodide of mercury and the iodide of potassium together, because the combination is a poisonous one, is not verified by clinical experience. They are given every day without bad results following. The biniodide is also advised in such cases, but it is not superior to the green iodide.

An excellent way of introducing mercury into the system is by inunc-

tion. The only objection which can be urged against this method of using mercury is its uncleanliness, but this may be obviated without sacrificing any of its advantages. The usual method of practising inunction has been to smear the ointment over the body, selecting various portions alternately, but this keeps the body greasy and dirty. Patients, especially those who are careful of their persons, naturally object to this method of treatment. A capital way of obviating this disagreeable feature, is to direct the patient to rub the preparation into the soles of the feet at bedtime, using each foot alternate nights, and wearing the same socks for five or seven nights at a time. Inunction may thus be practised without any discomfort to the patient, and without a great sacrifice of personal cleanliness. The preparations used are either the mercurial ointment of the pharmacopœia, or else the oleate of mercury, the twenty per cent. solution being the best.

Fumigations and hypodermic injections may be used, if occasion requires, and of the two, the former plan is the better. The latter is so likely to be followed by the formation of abscesses as to render its use very limited. If fumigations are employed, the patient had better be sent to one of the regular bathing establishments which are found in every large city, than to try to take the bath at home. Should, however, the home bath be decided upon, the rules laid down for its use in the text-books on venereal diseases should be followed.

Local treatment is a great adjuvant in the treatment of ulcerations, affections of the eyes, and in periosteal nodes. They certainly hasten a cure, and in cases of ulcerations promote cleanliness of the ulcerated surfaces; the only exception would be in cases where the ulcerations occurring on the skin of the body are covered with a firm, adherent crust, when this had better be left alone, as it makes the most desirable dressing. Of course, should a rapid extension of the sore or any other cause make it desirable, the crust may be gently detached by poulticing, and the surface dressed *secundum artem*. In all dressings, dry are preferable to wet preparations, as they absorb the secretions more rapidly and do not keep the surface of the sore macerated, a condition which sometimes retards recovery. Nodes of the bones or other parts may be painted over with the tincture of iodine, dressed with vesicants, or anointed with ointments containing mercury.

In keratitis or iritis instillations of atropine should be made to dilate the pupil, in order that adhesions of the iris to adjacent parts shall be prevented, and to break them up, if possible, should they have already formed. Leeches may be used in cases requiring a local abstraction of blood; indeed, all the methods which are recommended in treatises on the affections of the eye as applicable for similar affections not dependent on the syphilitic taint.

But one point should never be lost sight of in the treatment of these

cases of inherited syphilis, viz., the debilitated and sickly condition of the patient. Hence tonics, principally the ferruginous ones, and such medicines as cod-liver oil and its various compounds, together with good and nutritious food and plenty of it, play a very important part toward the patient's recovery; and any plan of treatment which omits these aids is defective and not the best which can be used. Often the best planned course may fail from neglect of these points.

INDEX.

ABORTION in infantile syphilis, 132
Absence of primary symptoms in nurse and child, 183
Acne in infantile syphilis, 65
Acquired syphilis in the infant, 37
Alopecia in infantile syphilis, 99
Appearance, characteristic general, in infantile syphilis, 81
Articulations, affections of, in late hereditary syphilis, 285

BONES, affections of, in late hereditary syphilis, 284
lesions of the, in infantile syphilis, 77
Buboes in infants, 56
Bullæ in infantile syphilis, 66

CATANEUS, on infectious influence of nurse's milk, 5
Cataract in infantile syphilis, 94
Chancre in a stranger a means of infection, 50
primary, in infants, 56
Choroiditis in infantile syphilis, 93
Color of skin in infantile syphilis, 81
Conception, influence of the mother infected before, 24
influence of mother when infected after, 28
Congenital syphilis, 106
influence of the father in, 11
influence of the mother in, 23
infection by a person infected with, 52
Coryza in infantile syphilis, 73

DATE, comparative, of symptoms in the nurse and the infant, 181
Death after birth in infantile syphilis, 136
Diminution of fœticidal action of the poison, 137

EAR AFFECTIONS in late hereditary syphilis, 291
Ear in infantile syphilis, 96
Ecthyma in infantile syphilis, 66
Etiology of infantile syphilis, 1
Exanthemata in infantile syphilis, 58
Expert, elements of judgment of an, 176
Eye affections in late hereditary syphilis, 289
in infantile syphilis, 92
Eyelids, syphilitic psoriasis of, 64

FATHER, influence of the, 11
French disease, discussion on, 8

HARE-LIP caused by congenital syphilis, 300
Health, previous and present, of parents, 177
previous and present, of the nurse, 179
state of, of persons exposed to contracting syphilis from the same source as the infant at the breast, 179
Heart in infantile syphilis, 90
Hereditary syphilis, 106
Heredity, Paracelsus the first to assert propagation of syphilis by, 6
Historical notice of infantile syphilis, 5
Hyalitis in infantile syphliis, 94

IMMUNITY from syphilis transmitted by the healthy parent (Ricord), 34
Impetigo in infantile syphilis, 65

Infection during labor, 37
by lactation, 40
by a lesion in the nurse, 40
by the milk, 43
from accidental causes, 49
by a primary sore in the nurse, 49
from a primary chancre in a stranger, 50
by a person affected with congenital syphilis, 52
by vaccination, 53
Intestines in infantile syphilis, 90
Iritis, hereditary syphilitic, 93

Keratitis, hereditary syphilitic, 92
Kidneys in infantile syphilis, 91

Labor, infection during, 37
Lactation, infection by, 40
Lesions of viscera in infantile syphilis, 82
Liver in infantile syphilis, 86
Lungs, in infantile syphilis, 83

Mathiolus, first writer to mention syphilis in new-born infants, 5
Medico-legal bearings, 176
aspects of morality of child's attendants, 177
Membranes, mucous patches of mucous, 61
Milk, Cataneus on infectious influence of nurse's, 5
infection by the, 43
Mortality in congenital syphilis, 265
Mother, influence of the, 23
Mother's influence when infected before conception, 24
when infected after conception, 28
Mucous membranes, syphilides of, in late hereditary syphilis, 282
Mucous patches in infantile syphilis, 59
of the skin, 59
of mucous membranes, 61

Nervous affections in infantile, 97
lesions in late hereditary syphilis, 285
Nurse, absence of interested motives in, 186
infection by a lesion in the, 40
infection by a primary sore in the, 49

Œdema in infantile syphilis, 82
Onychia in infantile syphilis, 76
Osseous system, lesions of, in infantile syphilis, 77
Ozena in late hereditary syphilis, 293

Papulæ in infantile syphilis, 63
Paracelsus was the first to assert the propagation of syphilis by heredity, 6
Parents, combined influence of both, 33
Pemphigus of infants, differential diagnosis between syphilitic and simple, 69
syphilitic, of adults, 69
Period of appearance of syphilis in the infant, 100
Peritonitis in infantile syphilis, 89
Poison, gradual diminution of the fœticidal action of, 137
Portal, sirup de, 283
Presence of primary symptoms in nurse and child, 184
Primary sore in the nurse a means of infection, 49
chancre in a stranger a means of infection, 50
chancre in infants, 56
Prognosis, etiological, in infantile syphilis, 126
semeiological, in infantile syphilis, 132
Psoriasis, syphilitic, of eyelids, 64
Pustules in infantile syphilis, 64

Relation of progress of the disease to its particular mode of origin, 104
of the progress of the disease to the period of the diathesis in the parents at the time of transmission, 110
Remedies to be used in treatment of infantile syphilis, 237
Retarded congenital syphilis, 114
Retinitis, hereditary syphilitic, 94

Scrofula is derived from the syphilis of the parents. 120
is syphilitic identical with ordinary, 122
Senile look of infantile syphilis, 81

Skin, color of, in infantile syphilis, 81
mucous patches of the, 59
syphilides of the, in later hereditary syphilis, 281
Sore, primary, in the nurse, a means of infection, 49
Spleen in infantile syphilis, 92
Squamæ in infantile syphilis, 63
Symptoms, comparative date of, in the nurse and the infant, 181
nature of, in a medico-legal point of view, 180
seat of, in a medico-legal point of view, 181
Syphilis, abortion in infantile, 132
acne in infantile, 65
acquired by infant, 37
affections of the articulations in late hereditary, 285
affections of the bones in late hereditary, 284
alopecia in infantile, 99
bullæ in infantile, 66
by heredity, Paracelsus the first to assert propagation of, 6
can hereditary be manifested in the second generation, 269
can the subject of hereditary acquire, 277
characteristic general appearance in infantile, 81
color of skin in infantile, 81
congenital infection by a person afflicted with, 52
coryza in infantile, 73
death after birth in infantile, 136
ear in infantile, 96
ear affection in late hereditary, 291
ecthyma in infantile, 66
etiology of infantile, 1
exanthemata in infantile, 58
eye in infantile, 92
eye affections in late hereditary, 289
heart in infantile, 90
historical notice of infantile, 5
impetigo in infantile, 65
in new-born infants, Mathiolus the first writer to mention, 5
intestines in infantile, 90
kidneys in infantile, 91
lesions of the bones in infantile, 77
lesions of viscera in infantile, 82
Syphilis, liver in infantile, 86
lungs in infantile, 83
mortality in congenital, 265
mucous patches in infantile, 59
mucous affections in infantile, 97
mucous lesions in late hereditary, 285
œdema in infantile, 82
onychia in infantile, 76
papulæ in infantile, 63
of parents. Is scrofula derived from the? 120
periods for appearance of symptoms of inherited, 280
peritonitis in infantile, 89
pustules in infantile, 64
retarded congenital, 114
senile look of infantile, 81
spleen in infantile, 92
squamæ in infantile, 63
symptoms of late hereditary syphilis, 280
syphilides of mucous membranes in late hereditary, 282
syphilides of the skin in late hereditary, 281
teeth in infantile, 98
thymus gland in infantile, 85
transmission of, from the fœtus to its mother, 142
transmission of, from the suckling to its nurse, 148
transmission of, from the new-born child to indifferent persons, 173
Syphilitic psoriasis of eyelids, 64

Teeth, in infantile syphilis, 98
Thymus gland in infantile syphilis, 85
Transmission of syphilis from the fœtus to its mother, 142
of syphilis from the suckling to its nurse, 148
of syphilis from the new-born child to indifferent persons, 173
Treatment, by the nurse's milk, 225
conditions connected with parturition, 204
curative, 219
direct, 225
doses to be used in, 247
duration of, 253
external, 243

Treatment, forms of, 242
internal, 242
of late hereditary syphilis, 301
local, for anus and genitals, 260
local, for face, 259
local, for mouth, 260
local, for nose, 259
local, for limbs, 260
local, for trunk, 260
local, for viscera, 261
local, 257
mode of, 233
preventive, 192
remedies to be used in, 237
Treatment, to prevent a child conceived or born under conditions which expose it to syphilis from being attacked, 191
to prevent a syphilitic child from transmitting the disease, 209
sanitary precautions during, 255
when to be begun, 220

VACCINATION, infection by, 53
Viscera, lesions of, in infantile syphilis, 82
Visceral affections in late hereditary syphilis, 293

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